POLICY RESEARCH WORKING PAPER 2993

Dealing with the Coffee Crisis in Central America

Impacts and Strategies

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The World Bank
Development Research Group
Rural Development
March 2003

POLICY RESEARCH WORKING PAPER 2993

Abstract

Current coffee prices are at record lows and below the cost of production for many producers in Central America. Moreover, the coffee crisis is structural, and changes in supply and demand do not indicate a quick recovery of prices. So, coffee producers in Central America are facing new challenges—as are coffee laborers, coffee exporters, and others linked to the coffee sector. Coffee plays a major economic role in Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua. The coffee crisis is actually part of a broader rural crisis caused by weather shocks (such as Hurricane Mitch and droughts), low international agricultural commodity prices, and the global recession. These challenges call for new strategies for Central American countries aimed at broad-based sustainable development of their rural economies.

The authors deal with the impact of the coffee crisis and strategies to deal with it. They include an analysis of the international coffee situation and country-specific analyses. The authors explore options and constraints for increased competitiveness and diversification, and discuss social, environmental, and institutional dimensions of the crisis.

The authors conclude that there are specific solutions that can be pursued for the coffee sector. Some are already being applied, but more can be done in a more systematic way. Also, there is a need for safety nets to deal with the short-term impact of the crisis. Longer-term solutions are to be found in increased competitiveness and diversification in the context of broad-based sustainable rural economic development.

This paper—a product of Rural Development, Development Research Group—is part of a larger effort in the group to analyze instruments for protecting farmers against risks. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Panos Varangis, room MC5-785, telephone 202-473-3852, fax 202-522-1142, email address pvarangis@worldbank.org. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. March 2003. (76 pages)

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ACKNOWLEDGEMENTS

The authors wish to acknowledge the significant contributions in its preparation by colleagues from the Inter-American Development Bank, and in particular Robert Kaplan, Juan Carlos Martinez, Kleber Machado, Ari Skromne and Bente Christensen, and colleagues from the USAID and in particular Carol Wilson and Lawrence Stoddard. Furthermore, the authors wish to thank their colleagues at IDB and USAID for making available for this report the individual country studies these two institutions had commissioned in November 2001. These country studies and the IDB/WB/USAID discussion document "Managing the Competitive Transition of the Coffee Sector in Central America" prepared for the Coffee Crisis its Impact in Central America: Situation and Lines of Action, that was presented in Antigua, Guatemala, April 3-5, 2002 formed the basis for the present report. The link to the website containing a summary of the Coffee Workshop held in Antigua, Guatemala, April 3-5, 2002 is: http://www.iadb.org/regions/re2/coffeeworkshop/

The authors also wish to thank Martin Raine, Carlos Felipe Jaramillo, Humberto Lopez, Helena Ribe, Ina-Marlene Ruthenberg, Steven Jaffee, Norman Piccioni and Donald Larson for valuable comments and suggestions in earlier drafts of the report.

I. INTRODUCTION

1. The decline of coffee prices in the international markets below 60 cents per lb. (see figure 1) have caused a significant crisis in the coffee sectors of Central American countries. Given the relative importance of coffee for the region the crisis is having negative economic, social and environmental re-precautions in these countries.

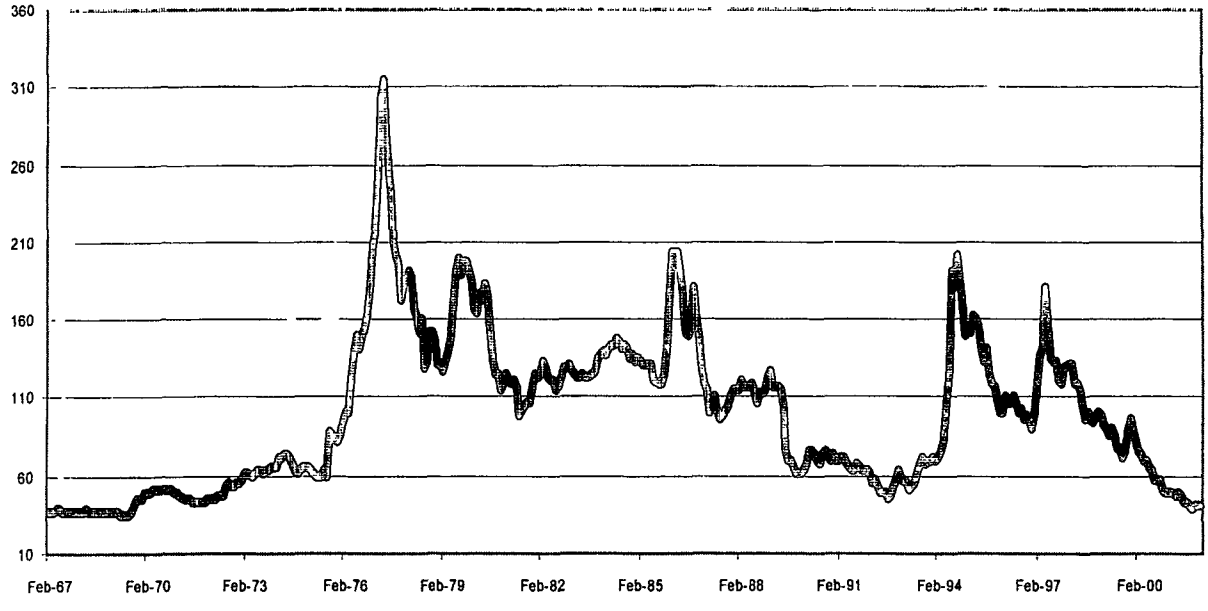
2. Responding to the concerns expressed by various governments in the region, the World Bank decided to launch a study in order to examine the impact of the low prices in the overall economies and coffee sectors, but more importantly provide ideas on how Central American coffee producing countries could deal with the crisis. At the same time the Inter-American Development Bank (IDB) and USAID embarked on similar studies. In November 2001 IDB and USAID initiated several country studies to evaluate the impact of the crisis and look into possible solutions. In January 2002, the three institutions, IDB, USAID and World Bank, decided to join forces and prepare a discussion paper outlining the main findings of the individual studies but focus on the potential solutions. In particular, the joint discussion paper discussed alternatives related to improving quality, marketing and exploring niche markets and on the other hand discussed possible strategies for diversification for marginal coffee areas. The paper also discussed environmental and social issues related to coffee in Central America. The discussion paper was presented and discussed in a stakeholder meeting convened by the three agencies in Antigua, Guatemala (April 3-5, 2002). The stakeholder meeting involved government officials, producers, NGOs, traders/exporters, and large international roasters, and generated lively discussions. The link to the website containing a summary of the Coffee Workshop held in Antigua, Guatemala, April 3-5, 2002 is: `http://www.iadb.org/regions/re2/coffeeworkshop/`

3. The present report builds on the findings of the consultant reports prepared for IDB and USAID, and the discussion paper and discussions during the April meeting in Antigua. Furthermore, this report has compiled some additional information on social and environmental issues related to coffee in Central America. It has benefited significantly from a recent report by CEPAL (*Centroamerica: El impacto de la caida de los precios del café*) published in Mexico, D.F., April 2002 and a study by LMC on the coffee crisis published in February 2002.

4. This report first deals with assessing the impacts of the crisis and then makes suggestions for strategies to cope with it. In particular, the report is structured as follows. Following this introduction, chapter 2 presents the nature and magnitude of the world coffee crisis and argues that this is a structural change in both world demand and supply requiring structural changes and repositioning of the coffee sectors of Central American countries. Chapter 3 analyzes the macroeconomic impact of the crisis for the five Central American countries and also looks at the impact on employment, production/exports, and finally presents some indicators of the competitiveness of the Central American coffee sectors. Chapter 4 presents what Central American governments are doing to deal with

the present crisis and argues that most of these measures deal with the short term problems of debt and price support rather than dealing with structural changes. Chapter 5 outlines in general terms the options related to improving competitiveness and diversification. Chapter 6 presents the options for improving quality, value added, marketing, and promotion strategies for Central American coffees, including the use of market-based ways to deal with price volatility and uncertainty. Furthermore, chapter 6 indicates the key parameters for successful projects in these areas and presents the Central American countries' position in the gourmet and niche markets for coffee. Chapter 7 addresses the possible alternatives in terms of diversification for Central American coffee farmers that cannot be competitive in the present coffee market. This section presents the key elements of a diversification strategy, the challenges facing diversification programs and lessons from experiences in rural diversification worldwide. Chapter 8 discusses the social impact of the crisis on small coffee producers and coffee laborers and provides some suggestions for establishing safety nets. Chapter 9 argues about the importance of coffee for the biodiversity of Central America, highlights the environmental impacts of the current crisis and ways to address them and concludes by presenting the lessons learned from some recent World Bank projects in Central America and Mexico that internalize the environmental externalities of coffee. Chapter 10 briefly presents the key institutions in the coffee sector and focuses on how these institutions and organizations can support the development and competitiveness of quality coffee in Central America. This chapter also presents key issues related to trade policy for coffee. Finally, Chapter 11 presents the summary conclusions and policy implications.

Figure 1: Coffee Price from 1967 to 2002 (prices in nominal US$ per 100lbs)



II. THE NATURE AND MAGNITUDE OF THE COFFEE CRISIS

5. Over the past five years, the world coffee market has undergone important changes in the supply side, which reflects a steady increase in world production and export levels. The current crisis in prices is not only part of a cyclical phenomenon; but also, it is a direct consequence of the new structure of the market, which is exacerbating the problem for Central American producers.

6. The near term price projections are not encouraging. With demand growing slowly and global production still at high levels and still expanding, most analysts predict that coffee price recovery is likely to be slow, at least for the near term. This threatens the longer-term sustainability of coffee production in Central America.

A. Structural Changes in the World Coffee Market

7. In the 1990s, prices of coffee were mainly affected by shifts in Brazilian production (caused mainly by frosts), subsequent adjustments by coffee suppliers responding to price shifts, and a slow but steady expansion of coffee production in other countries, especially Vietnam. This period contrasted to a generally downward trend in prices from highs in the mid-1970s. The loss of about 13 million bags of Brazilian production in the mid-1990s pushed prices to a high level.

8. By the end of the 1990s, however, Brazilian post-frost replanting----freed from government constraints on tree density and planting techniques, as well as the opening of new production areas----has increased production and, hence, increased world supply. Brazilian cost of production have also declined through the adoption of improved technologies and in particular mechanized harvesting. In addition, new investments (plantings) in Vietnam and increasing production from other traditional producing countries led to a substantial coffee surplus.

9. During 2000 and 2001, worldwide oversupply caused coffee prices to drop to their lowest levels in 30 years---or to a 100-year low, if adjusted for inflation. Coffee prices have plummeted below the cost of production for many coffee producers, causing financial and social hardships to farmers and laborers.

10. Total current production of green coffee is about 115 million bags (60 kilo net). This exceeds consumption of about 105 million bags (80 million in importing countries and 25 million in producing countries). Over-production has led to the accumulation of inventories in producing and consuming countries, and the drop in world prices.

11. Apart from over-supply, two other principal factors are underlying the current crisis: structural changes in demand, and changes in the nature of the supply of quality coffee from Brazil and Vietnam.

B. Changes in demand

12. Overall, world demand has recovered from the small drop that resulted from the price increase in 1994/95. As a result of economic liberalization and growth in emerging countries, notably in Eastern Europe, parts of Asia, and Latin America (especially Brazil), world demand has reached about 105 million bags. This world total masks a number of trends:

- Aggregate demand in the major importing countries is growing slowly, if at all. This suggests that increases in the high quality end of the market are being partly offset by losses elsewhere. Meanwhile, new non-traditional markets are emerging and growing quickly, driven by the availability of cheap coffees in soluble form.
- Roasters have learned to increase the absorption of natural and robusta coffees by such processes as steaming to remove the harshness of taste.
- Roasters have learned to work with lower working stocks. This has increased the requirements of the logistical capabilities on suppliers. This, in turn, has favored large trading companies, and has led to consolidation of the supply chain in fewer major traders.
- Roasters have become more flexible in their ability to make short-term switches between coffee types.
- The consolidation of roasters in periods of oversupply has led to a situation where prices at the retail level may not necessarily reflect the reductions in green coffee prices in world markets.
- A small but viable segment of the market has emerged that focuses on quality and product differentiation (specialty and gourmet coffees).

13. In addition to these trends, income effects are proving to be a significant factor in coffee consumption. Consumption in northern Europe, particularly in Germany, is stagnant, but is increasing somewhat in southern Europe, and growing in much of Eastern Europe. However, the increase in consumption in Eastern Europe and in parts of Asia recovering from economic problems is being driven by the high availability of cheap robustas, which have allowed roasters to make a product available at "affordable" prices. In Brazil, roasters have taken an opposite approach, concentrating on labeling and quality in the domestic market. This has allowed Brazil to increase domestic demand and become the world's second largest consumer. This example is relevant for a Central American strategy.

C. Changes in quality

14. While supply has expanded, the quality of green coffee in some parts of the world has also been improving. Higher quality beans from Brazil, derived from better washing capabilities and quality controls, are intensifying the competition against "Extra Hard," "Prime," and "Extra Prime" coffees from Central America. Although Vietnam's coffee quality is still low, some quality improvements in Vietnam---as evidenced by some recent

favorable grading results from the coffee futures markets---are allowing roasters to use more of these (Brazilian and Vietnamese) coffees. At the same time, there are growing consumer markets for gourmet and other specialty coffees (gourmet, fair-trade, organic, eco-friendly, etc.) that command a significant price premium.

III. COFFEE IN CENTRAL AMERICA IN VIEW OF THE RECENT CRISIS

15. This section presents the key characteristics of the coffee sectors in the five Central American countries (Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua) and highlights the impact of the recent coffee crisis on these sectors and national economies.[1]

16. The five Central American countries together are the second largest coffee producer behind Brazil. Coffee production varies amongst the Central American countries but it is typically characterized by small holder production.[2] Table 1.1 below presents the main characteristics of coffee production in the various countries.

Table 1.1: Key Characteristics of Coffee Production in Central America (1999/2000)

	Production	Area	# producers	yield	Average farm size	Exports	% of total
	quintals	000 ha		quintals/ha	ha	mill US$	exports
Guatemala	6,794,022	267	62,649	25.5	4.3	597.8	21.0
Costa Rica	3,608,940	115	73,707	31.4	1.6	308 7	5.3
El Salvador	2,982,157	162	23,597	18.4	6.9	311.5	11.0
Nicaragua	1,457,135	100	30,400	14.8	3 2	194 7	26.5
Honduras	3,913,460	260	90,000	15.0	2.9	345.2	26.1
Data for 1999/00 Manzana (mz) = 0.7 ha Quintal (qq) = 100 lbs or 46kg							

Source: estimates using data from the IDB country reports

A. The macroeconomic impact of the coffee crisis.

17. During 1999/00 coffee in Central America accounted for about $1.7 billion, corresponding to about 11% in total export revenues. Coffee was an important source of export revenues in Guatemala, Nicaragua, and Honduras, but less so in Costa Rica and El Salvador. However, during 2000/01 the share of coffee in total exports has dropped to less than half of what it was in 1999/2000 mainly due to the price decline, ranging from about 3-4% for Costa Rica to 14% for Nicaragua.

18. At the macroeconomic level, national governments and banks are also affected by the loss of trade-generated earnings. Central American countries have suffered a 44 percent decline in revenue from coffee exports in one year (see table 1.2). Export revenues from

[1] Panama is not included because of the small size of its coffee production and the fact that coffee is not very important for Panama's economy.

[2] At least there are more smallholder producer than medium and larger producers. On the other hand, larger producers usually account for a significant share of the production.

coffee dropped from US$1.7 billion to US$938 from crop year 1999/2000 to 2000/2001, and are estimated to fall further to about US$700 million in 2001/2002. The decrease in exports hurts the balance of payments and significantly affects overall economic activity, particularly due to the broad impact of expenditures of coffee farmers and laborers. The coffee sector debt and past due loans hamper the financial sector, limiting banking activity and financing to other economic sectors.

Table 1. 2. Decline in Coffee Export Revenues, 1999/00-2000/01
(US$ million)

Country/Crop year	*1999/ 2000*	*2000/ 2001*	*Change (%)*
Guatemala	598	400	-38%
Honduras	345	167	-33%
El Salvador	276	108	-61%
Nicaragua	170	85	-50%
Costa Rica	289	178	-52%
Total	***1,678***	***938***	***-44%***

Source: IDB/USAID/WB studies

19. The decline of coffee export revenues has contributed to the increase of the BOP deficit in the Central American countries, despite an increase in remittances and lower interest rates to service the external debt. In 2001, this BOP deficit for the five Central American countries reached $3.65 billion, equivalent to about 6% of GDP. However, despite the significant decline of coffee export revenues, the loss corresponds only to 1.2% of GDP on average for the five countries as a whole. While the macroeconomic impact of the crisis maybe limited, there is a sectoral impact particularly in terms of the profitability of the sector, the employment and the environment. These issues are discussed below.

B. The impact of the crisis on production and export volumes

20. Lower prices usually induce producers, particularly the less competitive ones to reduce production. However, comparing coffee production and exports in Central America since 1990 (see table 1.3) it can be observed that during the period 1990 to 2001 coffee production has increased by about 14% and exports by about 22%. There have been variations amongst countries. Nicaragua has registered the highest increases in both production and export volumes, followed by Honduras and Guatemala. On the other hand, production and exports in El Salvador have shown a significant decline followed by Costa Rica. This picture does not change much if we select a different period of time in the 1990s as a basis of comparison. However, comparing production and exports between 2000 and 2001, it is evident that there is an overall decline of about 10%. Most of the decline is in the production of El Salvador and then Honduras. There have been several reports that due to low prices farmers do not tend their farms and apply less agrochemicals. Evidence indicates that between 2000 and 2001, overall coffee yields declined in Central America, with the largest declines registered in El Salvador (-25%),

Nicaragua (-20%) and Honduras (-17%). Anecdotal evidence suggests that much of the decline is due to lower prices although it is possible that recent droughts and other climate-related effects have also played a role. Nevertheless, (a) it is too difficult to come up with conclusions based on just two periods of data (2000 and 2001), and (b) it may be too early to assess the full impact of low prices since it usually takes some time for production and exports to respond to prices.

Table 1.3: Coffee Production and Export Volumes in Central America

Exports (in thousands of quintals)							**% Change**	
	1990	**1997**	**1998**	**1999**	**2000**	**2001**	**1990-2001**	**1998-2001**
Costa Rica	3,043	2,506	2,914	2,824	3,046	2,760	-10 3%	-5 3%
El Salvador	3,026	3,712	2,474	2,389	3,258	2,235	-35.4%	-9 7%
Guatemala	4,419	5,547	4,629	6,108	6,317	5,886	24 9%	27.2%
Honduras	2,995	3,796	5,137	4,379	6,415	5,515	45.7%	7 4%
Nicaragua	800	893	1,207	1,204	1,678	1,855	56.9%	53.7%
Total Central America	14,283	16,454	16,361	16,904	20,714	18,251	21.7%	11.6%
Production (in thousands of quintals)							**% Change**	
	1990	**1995**	**2000**	**2001**			**1990-2001**	**1995-2001**
Costa Rica	3,308	3,306	3,391	3,263			-1 4%	-1 3%
El Salvador	3,132	3,040	2,798	2,091			-33.2%	-31 2%
Guatemala	4,200	4,700	5,516	5,500			31.0%	17 0%
Honduras	2,604	2,919	4,266	3,549			36.3%	21 6%
Nicaragua	932	894	2,083	1,800			93 1%	101.3%
Total Central America	14,176	14,859	18,054	16,203			14 3%	9.0%

Source: CEPAL (2002), based on official figures

C. The impact of the coffee crisis on employment.

21. Coffee is a very important source of employment for the rural sector in Central America. On average, over one quarter of the rural labor force is employed in the coffee sector. It is worth noting that in Nicaragua, 42% of rural labor is employed in coffee. Table 1.4 below shows the total employment in coffee and as a share of the total rural employment.

Table 1.4: Estimated Employment in Coffee Production in Central America

Country	Economically Active Labor Force in Rural Areas	Labor Force Employed in Coffee	% Rural Labor Employed in Coffee
Costa Rica	725,000	200,000	28%
El Salvador	936,000	160,000	17%
Guatemala	2,286,000	700,000	31%
Honduras	1,152,000	300,000	26%
Nicaragua	672,000	280,000	42%
TOTAL Central America	5,771,000	1,640,000	28%

Source: CEPAL (2002, p.21)

22. Low coffee prices are causing unemployment to reach critical levels in Central America. In the last two crop seasons, seasonal employment has decreased by more than 20 percent, while permanent employment has plummeted by more than 50 percent (see table 1.5). More than half the permanent labor force is now working at less than half capacity. Wages have also fallen as farms have received lower coffee revenues and the supply of labor has swelled through unemployment. CEPAL (2002) estimated that the loss of employment has resulted in a loss salary income of about $140 million for Central America as a whole, of which coffee workers in Guatemala have lost in salaries $62 million followed by Honduran coffee workers who lost $37 million. Further details about the employment situation in the coffee sector, the typology of producers and the social impact of the crisis are discussed in chapter VIII.

Table 1.5. Decline in Employment in the Central American Coffee Sector, 2000-2002
(thousands of workers)*

Worker / Crop year	*2000/ 2001*	*2001/ 2002*	*Change (%)*
Seasonal	1,700	1,350	-21%
Permanent	350	160	-54%

* In Guatemala, Honduras, El Salvador, Nicaragua, and Costa Rica

Source: IADB/USAID/WB studies

23. The situation is especially critical because, unlike other crops, the majority of coffee producers are smallholders living in remote rural areas, who heavily depend on their own harvest and extra cash from temporary picking work. These growers depend on this cash income to pay for food and other essential items such as school fees and health care, and they have no cash reserves on which to draw from in hard times. A crisis in the sector creates social imbalances, a general downturn in the rural economy, accelerated migration to urban areas and other countries, and potential for instability.

24. Coffee is produced by many small farmers who account for only a small percentage of the total production. In contrast larger farmers, although a small percentage of the total farmers, account for most production. The largest concentration of production amongst medium and large farmers is in Guatemala and El Salvador, followed by Nicaragua. Costa Rica and Honduras have a significant part of their coffee production from small producers. Table 1.6 below summarizes the share of production by farmer size.

Table 1.6: Coffee Production by Producer Size

	Less than 100qq		More than		
	%production	% producers	quintals	%production	% producers
Guatemala	20.0%	79 8%	2000qq	50.0%	5.6%
Costa Rica	38.2%	90.2%	800qq	23 0%	0 5%
Nicaragua	14.0%	89.6%	1500qq	36.0%	0.6%
El Salvador	9.6%	80.8%	1000qq	57.8%	4.0%
Honduras	44.7%	92.0%*	1000qq	10.6%	3 0%*

Source: estimates using data from the IDB country reports
Note: * are very approximate estimates

D. Environmental Problems Arising from the Current Coffee Crisis

25. Environmental issues are not of high priority to many producers struggling to cope with the coffee price crisis. Existing environmental problems have, in some cases, worsened. Meanwhile, some new environmentally related problems have intensified, such as destruction of shade forest---followed by decreasing biodiversity---and destruction of ecosystems and natural habitats. Chapter IX discusses in details the environmental issues of coffee production and possible strategies to deal with them, but here are some of the key environmental issues arising from the crisis:

26. *Reduced application of agro-chemicals.* The crisis has led the reduction in the application of agro-chemical in almost all the Central American countries (Guzman 2002). This may have some beneficial short-term consequences for the environment (water contamination and soil) but it may lead to spread of diseases (e.g. leaf rust, etc.) and in the longer term the low profitability may induce farmer to switch to other crops.

27. *Abandoning the farm, or growing new crops instead of coffee.* The low price of coffee especially places pressures on producers to grow other crops to supplement or substitute for coffee, in order to survive. The new crops might not be adequate for the soils and slopes in the coffee regions, and introducing the inadequate crops could cause serious erosion problems. Furthermore, abandoning the coffee plantation and leaving cherries un-harvested can cause serious plagues and infestations of pests the following year, making it difficult to reinitiate any agricultural production.

28. *Destroying the shade forest.* The coffee crisis drives traditional coffee producers to cut down and sell the shade forest as timber or firewood. Introducing new crops as a substitute for coffee can motivate clearing of the coffee plants and surrounding areas, using slash and burn techniques.

29. *Limited implementation of cleaner technology.* Over the past years, an increasing number of wet mills have implemented water and energy saving measures, and promoted their mills as environmentally friendly or certified. The coffee crisis might prevent new mills from investments that implement such measures. There is some evidence (see

Guzman 2002) that in Central American countries, with a possible exception Costa Rica, the current coffee crisis has lead to a reduction of sound environmental practices at the level of wet milling.

E. The competitive position of Central American coffees in view of the crisis

30. Two obvious ways that Central American countries can compete is through improvements in productivity (higher yields and lower costs) and through emphasis in producing better quality coffees, including penetrating specialty markets.[3]

31. ***Productivity and costs of production.*** Average coffee yields vary amongst countries with Costa Rica and Guatemala having higher yields compared to the other countries. Although the average farm size in Costa Rica is about 1.6 ha (or 2.2 manzanas), average yields are very high (one of the highest in the world) because of the adoption of high yielding technologies and use of agrochemicals. Central American countries have improved their yields during the past decade.[4] Table 1.7 below compares the average yield for the period 2001 and 2000 to the yields in 1990 and 1995 respectively. It shows that with the exception of El Salvador, coffee yields in Central America have improved in all countries. Nicaragua, Guatemala and Honduras have shown the largest increases in yields. At about 18 quintals per ha, average coffee yields in Central America are comparable to those of leading world coffee producing countries such as Brazil (17qq/ha) and Colombia (18qq/ha), but below those of new and dynamic producers such as Vietnam (48 qq/ha) and India (21 qq/ha).[5]

Table 1.7: Changes in Coffee Yields

	1990-2000/01	*1995-2000/01*	*2000-2001*
Costa Rica	9%	4%	-4%
El Salvador	-20%	-19%	-25%
Guatemala	28%	13%	0%
Honduras	22%	23%	-17%
Nicaragua	40%	75%	-20%
Central America	11%	9%	-11%

Source: elaborated from CEPAL (2002) based on official data

32. In terms of cost of production, table 1.8 below presents the costs of production estimated by the various consultants of the IDB/WB/USAID (2002) study, of the CEPAL (2002) study, and LMC (2002). The IDB/WB/USAID data refer to the crop year 1999/2000 while the CEPAL data refer to 2001. The LMC estimates refer to the 2000/01 crop year. In the case of Nicaragua and Honduras, the estimates from the local consultants for the IDB/WB/USAID study were able to distinguish between three levels

[3] Penetrating specialty markets is a partial solution that will work for some but not the majority of farmers.

[4] It should be noted that higher productivity (in terms of yields) may not necessarily mean higher profitability. Being more productive may be less important than improving the marketability of production. Furthermore, higher yields are often accompanied by higher labor and input costs.

[5] Figures refer to quintals per hectare (qq/ha) and are estimates for the 2000/01 crop year presented in the CEPAL (2002) report, table A-2.

of technology: traditional (very low use of inputs), semi-technified, and technified. Although there are certain differences between the data presented in the table below, it appears that there is rather consistent ranking of countries in terms of costs of production. The highest cost producer appears to be Costa Rica, followed by Guatemala, then Nicaragua, El Salvador and Honduras. However, from the LMC study, El Salvador appears to be the second highest cost producer of the group. Taking this ranking into consideration and looking at what happened with production, it can be noted that the highest cost producer (Costa Rica) has contracted its production during the 1990s, and so did El Salvador.

Table 1.8: Costs of Production

		Consultants	CEPAL	LMC
		US$/quintal	US$/quintal	US$/quintal
Guatemala		51	74	74
Costa Rica		77	86	100
El Salvador		48	57	84
Nicaragua			70	67
	Traditional	53		
	Semi-technified	58		
	Technified	70		
Honduras			62	65
	Traditional	36		
	Semi-technified	46		
	Technified	58		

Source: the first column "consultants" refers to cost estimates obtained through the various country study reports prepared by individual consultants for the IDB/WB/USAID study. The second column refers to the cost estimates presented by CEPAL (2002, p.30). These estimates are based on cost information form the various coffee institutes. The third column refers to estimates made by the LMC report, "Coffee in Crisis", 2002.

33. A possible explanation about El Salvador is that the costs (CEPAL and IDB/WB/USAID) do not include financial costs and El Salvador's coffee sector appears to be heavily indebted. Taking into consideration the financial costs puts El Salvador amongst the high cost producers. Furthermore, coffee production in El Salvador has suffered from various adverse climatic conditions during the 1990s, imposing additional rehabilitation costs.

34. Finally the LMC (2002) report provides some evidence as to the cost competitive position of Central American countries vis-à-vis. other coffee producers in the world. The study has considered 22 coffee producing countries from Latin America, Asia and Africa. By examining the various individual producing country costs, it can be seen that Nicaragua and Honduras are amongst the lower cost producers in the group of 22 main coffee producers, Guatemala falls somewhere in the middle and Costa Rica and El Salvador are in the high cost group. Note that Vietnam ranks as the lowest cost producer

followed by Indonesia.[6] The "expensive" items that make certain Central American countries to rank as higher cost producers in the LMC report are: labor (Costa Rica), capital/financing (El Salvador), and inputs (Guatemala).

35. ***Types of coffee and coffee quality***. Most coffee in Central America can be classified as high and strictly high grown coffee. This corresponds to coffee grown above 800 meters. Coffees grown between 800-1,200 meters are usually classified as hard bean (HB) and above 1,200 meters are classified as strictly hard (SHB) and often command significant premiums in the market. Table 1.9 below shows the share of coffee production that comes from higher altitude. It is worth noting that the highest share of production classified as strictly hard bean (SHB) is found in Nicaragua, then Guatemala followed by Costa Rica and the lowest is found in El Salvador. The highest share of production coming from above 800 meters is in Honduras followed by Nicaragua, then Guatemala and Costa Rica, while the lowest share comes from El Salvador. However, although Guatemalan and Costa Rican coffees usually command significant premiums for quality coffee, Honduras is penalized (sells at discount) even though most of its coffee can be classified as high grown. Trade sources often sight that the reason for the discounts for Honduran coffees is the inadequate harvest and post-harvest preparation.

Table 1.9: Share of Coffee Classified as High and Strictly High Grown

	SHB	HB	SHB plus HB
Costa Rica	39%	24%	63%
Guatemala	45%	19%	64%
El Salvador	15%	32%	47%
Nicaragua	85%	NA	85%
Honduras	19%	67%	86%

Source: estimates using data from the IDB country reports
Note: SHB (strictly hard bean) is for 1200 meters and above and HB (hard bean)is between 800m and 1200 meters.

36. The above data clearly indicate that there is good potential for Central American coffees to access quality and specialty markets. Particularly, there is great potential in places like Nicaragua and Honduras where climatic, soil and altitude conditions are appropriate for the majority of coffee produced, yet coffees from Nicaragua and Honduras do not have the name recognition as coffees from Guatemala and Costa Rica. El Salvador appears the least able in the group to exploit very high quality markets for coffee.

37. Central America, as a region, has been a leading exporter to gourmet, fair trade and organic markets along with Mexico and Colombia. Table 1.10 presents some estimates of actual exports in the various specialty coffee market segments (differentiated, organic, fair trade) as well as some estimates of the potential certifiable capacity for organic and fair trade coffees.

[6] Vietnam and Indonesia are mainly robusta producers and cost of production for robusta coffee are usually lower compared to arabicas.

Table 1.10: Exports and Potential Capacity for Specialty Coffee Markets

	Coffee sold to Differentiated markets	Organic exports	Near-term certifiable organic potential	Fair trade exports	Share of fair trade	Potential registered fair trade capacity
	% exports	000 bags	000 bags	000 bags	% exports	000 bags
Costa Rica	35-40%	NA	NA	16	0 9%	41
El Salvador	5%	4.6	11	6 (2001)	0 5%	12
Guatemala	40-50%	10 (2000)	35	22 (2000)	0.7%	60 (2001)
Honduras	10-15%	NA	5	8-11 (2000)*	0.4%	51 (2001)
Nicaragua	10-15%	10 (2000)	NA	24 (2000)	2.0%	135 (2001)
* Includes fair trade and organic						

Source: estimates calculated by Daniele Giovannucci (consultant) from various sources and Fair-trade Labeling Organization International (FLOI)

38. The table above indicates that a significant amount of exports from Costa Rica and Guatemala are sold into differentiated markets.[7] Even in these countries, the potential for exporting more into organic and fair trade markets is significant. Nicaragua and Honduras export relatively little into differentiated markets. But Nicaragua is exporting, relative to other Central American countries, a significant amount to fair trade and organic markets. In particular, for the differentiated markets, Nicaragua and Honduras, with their high percentage of high altitude coffee, the older varietals, the microclimates and traditional production methods found in these two countries, give a substantial potential for improvements and increase market share. It should be noted that while exports of differentiated coffees overall can have a significant share, exports to fair trade and organic markets are very small (below 1% in most cases) and even reaching their short-medium term potential, most Central American countries should not expect to have more than 5% of their exports into organic and fair trade markets. However, increasing exports into differentiated coffee markets may well be one of the ways to deal with the current coffee crisis.

39. Some indication about the quality premiums (or discounts) for Central American coffees can be provided by looking at the export unit values.[8] While export unit values are not an accurate indication of quality premiums, they nevertheless provide some idea about the average value of the bulk of coffees exported from these countries. Table 1.11 below shows the export unit values for Central American coffees. This table indicates that over the last 11 years the export unit values for Costa Rica, El Salvador Guatemala, and Nicaragua are at somewhat similar levels, while Honduras ranks quite low.

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[7] Differentiated markets for coffee signify gourmet, fair-trade, organic, shade grown, and other types of specialty coffees. These coffees have specific attributes (quality, social, environmental, etc.) that distinguish them from the "bulk" commodity coffee.

[8] Export unit values are calculated by dividing the total value of coffee exports by the total volume of coffee exports.

Interestingly, and despite their lower penetration in specialty coffee markets both Nicaragua and El Salvador rank very closely to Costa Rica and Guatemala in terms of export unit values. This may reveal something about the relatively lower consistency of coffee quality grades in the latter two countries. Another important observation is that the 2001 estimated coffee export unit values for Central America are significantly below those during 1990, the year after the collapse of the International Coffee Agreement.

Table 1.11: Export Unit Values for Coffee in Central American Countries

Export Prices ($/qq)	1990	1997	2000	2001
Costa Rica	81	166	90	67
El Salvador	81	136	96	59
Guatemala	73	112	92	65
Honduras	79	86	53	33
Nicaragua	85	136	101	59
Central America	78	121	81	54

Source: CEPAL (2002)

40. Another indication of quality premiums and discounts is given in the table 1.12 below that summarizes the premiums and discounts of Central American coffees . Premiums and discounts are reported daily by *Complete Coffee Coverage*, a daily publication on prevailing coffee prices in the market. These premiums/discounts change by the day and the table below is a snapshot of them during the week of July 15, 2002. Thus although this table reflects how the market values each of these coffees at a given time, caution needs to be exercised in reading it because it reflects the situation over a very brief period of time. The table is structured as follows. It shows the premiums and discounts (inside parenthesis) of Central American coffees vis-à-vis. the New York C contract price for September delivery. The table divides coffees into two principle categories: SHG (Strictly High Grown) European preparation and Primes. For comparison, the Colombia Supremo is used for the SHG and the Brazilian Santos is used for the Primes. The table also includes quotes for Mexican High Grown (HG) coffee and for Mexican Prime coffees. During the period in July 2002 that the table was constructed there were no quotes for Costa Rican coffees. The table shows that Colombia Supremo commands a high premium in the market, while Guatemalan and Nicaraguan SHG coffees also trade at a premium. SHG coffees from El Salvador and Honduras sell at discounts, in fact at levels below the High Grown (HG) Mexican coffee. Looking at the discounts for the Primes, it can be seen that all primes sell at discounts which are higher compared to Brazilian Santos 2/3. However, given the possibility for substituting some of the Central American Prime coffees for Brazilian Santos 2/3, the price differentials are such as roasters would likely try to use as much Santos 2/3 as possible at the expense of Central American Primes.

41. There are somewhat similar messages from the export unit values for 2001 (table 1.11) and the market differentials presented in table 1.12. Honduran coffees appear to be fetching lower prices compared to other Central American coffees, while Guatemala and perhaps Nicaragua fetch higher prices. El Salvador coffees appear to trade at discounts vis-à-vis. other Central American and Mexican coffees, with the possible exception of Honduran coffees.

Table 1.12: Coffee Price Differentials During Mid-July 2002

	SHG	Prime
Nicaragua	$3	NA
Honduras	(-$4)	NA
Guatemala	$5.5	(-$3)
El Salvador	(-$3)	(-$5)
Mexico	(-$2) for HG	(-$3) to (-$4)
Brazil Santos 2/3		(-$19)
Colombia Supremo	$7 5 to $8	

Source: Complete Coffee Coverage; 17 July 2002

Note1: SHG=strictly high grown; HG=high grown; the SHG prices are for European preparation.

Note 2: All numbers are US$ per quintal (100 lbs) and they signify premiums (discounts) vis-à-vis. the New York coffee C contract price for September delivery at the exchange. Inside parentheses are negative numbers signifying discounts vis-à-vis. the New York C contract price.

IV. RESPONSES TO THE CRISIS

42. The present coffee crisis has similarities with the crisis following the collapse of the International Coffee Agreement in 1989.[9] The collapse of the prices in the early 1990s was met by the creation of emergency funds in Costa Rica and El Salvador with the objective of supporting the prices received by producers.[10] To deal with the current crisis, Central American countries have responded in various ways. The measures adopted rely on similar short term schemes: compensating funds to support producer prices and refinancing of the debt. Less commonly used are programs for longer-term structural change of their coffee sectors with the objective of improving quality and productivity and also in considering possible diversification alternatives for certain areas.

43. **Costa Rica** has the National Fund for Coffee Stabilization (FONECAFE) that was created in 1992 to respond to the crisis following the collapse of the International Coffee Agreement in 1989. This fund has as objective to compensate farmers when the final price (precio de liquidacion) is below the costs of production by more than 2.5%, and when there are funds available. The maximum debt (size) that the fund can assume is $50 million. During 1994-1997, the producers not only repaid the funds but also FONECAFE accumulated additional $23 million. These funds enabled FONECAFE to provide support of $6.38/fanega to producers for 1998-99 and 1999-2000.[11] For 2001, coffee producers received from FONECAFE $18.76 per fanega produced as support for the crisis. Of these payments, $6.38 were from the previous savings in FONECAFE while the reminder will need to be repaid into the fund when FOB prices exceed $92 per quintal (100 lbs). For the new funds, FONECAFE issued two bonds for $25 million, for 10 years at a rate of 8% with 3 years of grace in the repayment of principle.

44. In addition, the Chamber of Coffee producers, the cooperatives, and the Union of small producers (UPANACIONAL) have agreed with the government to restructure the coffee producers' debt with millers/processors (beneficiadores) and banks. The debts were estimated at $120 million. The proposal is for the creation of a trust fund that will issue bonds worth $120 million. The bonds will have an endorsement from the government for $25 million, $10 million from ICAFE, $10 million from the Institute for Cooperative Development (INFOCOOP) and $75 million guarantees from the millers/processors, banks and producers. The trust fund will purchase the producers' debt and hold it for 10 years.

45. Finally, ICAFE is implementing two programs for 2001/02 crop. One is the retention of the 5% lowest quality coffee and the second is for a plan to improve the overall quality of exportable coffee from Costa Rica.

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[9] See Akiyama and Varangis (1990)

[10] For more information about the policy responses in El Salvador, Costa Rica and Mexico due to the collapse of coffee prices in 1989-90 see Jaramillo (1991).

[11] One fanega equals one quintal or 100 pounds.

46. **El Salvador** established an Emergency Fund for Coffee (*Fondo de Emergencia para la Caficultura*) for an amount of US$45 million. This fund was established in 1992 in response to the decline in coffee prices after 1989. The fund was distributed to all producers independently of their level of debts, capacity of repayment or availability of collateral. Funds were obtained through an international loan and were to be repaid totally by 1999/2000. During the period of price recovery, 1994 to 1997/98, producers managed to reduce their longer term debt. However, in 1998 a severe drought reduced production substantially and producers' debt swelled again. Furthermore, after 1999, coffee prices declined significantly and this prompted the creation of a second emergency fund (*Fondo de Emergencia II*) in 2000. The 2000 fund received $80 million through the issuance of a bond. Producers receive $25/qq of their average production 1998/99 and 1999/2000. The producers will have to repay $5/qq annually plus 11% interest.

47. In addition, for the longer-term there is a program for the renovation of the coffee farms (*Programa Integral de Renovacion del Parque Cafetalero*). This program was designed by the Ministry of Agriculture and the Banco Multisectorial de Inversiones (BMI) and consists of $100 million that will be made available for the renovation of coffee farms, financed through the banking system. The program consists of two main components. The first component is a credit at 9% interest rate, for 15 years with 5 years grace period. It is for financially solvent producers with more than 25 manzanas situated in areas 800 meters or higher. The second component is a technical assistance, that is a grant and it is not reimbursable.

48. Despite all these measures, at the end of the 2000/01 the situation was very difficult. Banks have reduced their working capital lending from $40/qq to $20/qq while BMI estimated that debts in the sector could have been as high as $250 million even after the $80 million support from the Emergency Fund during 2000. This caused the creation of another program, the *Programa de Rescate Cafetalero*. This is an integrated program consisting of four components:

- The creation of a trust fund (FICAFE) to restructure the debt of producers.
- Supplemental credit for production for the 2001/02 equivalent to $20/qq.
- Elimination of the lowest 5% quality of coffee.
- Credit for harvest for the 2001/02 crop.

49. In **Guatemala**, a trust fund was authorized by the Congress with the support of the federal government to finance producers for the following programs: (i) diversification out of coffee (funds for planting, maintenance, harvest), (ii) agro-processing (equipment, machinery, working capital, physical infrastructure), (iii) marketing, and (iv) debt restructuring. The trust fund was authorized to raise $100 million through bonds offered in the domestic market at an interest rate of 8.5%. The trust fund was established in October of 2001 and is administered by the Bank of Rural Development (BANRURAL). The very small and small farmers (around 50,000) are to receive around $40 million while the medium and large ones (around 12,000) will receive around $60 million.

50. In **Honduras** the government, through the National Coffee Fund (Fondo Cafetero Nacional) provided 330 million Lempiras (around $20 million) to coffee producers. With

these funds, each coffee producer received 100 Lempiras per quintal of green coffee produced. During 2000/01 producers received 70 Lempiras per quintal of green coffee produced. Producers are expected to repay these funds to FCN through an export tax possibly as early during the 2002/03 harvest year. Additionally, the government has reduced the cost of export certification from $6 to $5 per quintal. It should be noted that Honduran export costs, fees and taxes, have fueled a significant flow of coffee to Guatemala, El Salvador and Nicaragua to avoid these charges.[12]

51. In **Nicaragua** the process to support the coffee sector met with significant delays. The decline of prices have precluded many farmers from repaying their debt to banks and exporters and traders. It is estimated that coffee producers owe around $70 million which corresponds to about 2.7% of the GDP. The producers asked the government to intervene in order to design a contingency program to deal with their debt and a law that will prohibit the foreclosure of their properties. The crisis not only affects the producers but also the banks,, micro-finance institutions, traders, roasters and even international companies. Finally the government promised to assist those producers with debts to the banks and exporters and gave a loan of $25 per quintal to be repaid in 8 years. It is estimated that by the end of 2001 this measure has benefited around 15% of the producers, mainly the larger ones.

52. To **summarize**, Costa Rica and El Salvador have used in the past emergency funds to support the income of producers when prices declined. The funds were repaid because of the recovery of coffee prices during 1994-97. Without this temporary price recovery the repayment would have been questionable. To respond to the coffee crisis after 1999, both Costa Rica and El Salvador and now Honduras are again using emergency funds whose repayment will again rely on the recovery of world coffee prices. If recovery is slow and prices remain at relatively low levels, it will hamper the ability of farmers to repay.

53. In addition, and in response to the coffee crisis, Costa Rica, El Salvador, Guatemala and Nicaragua are using programs to restructure the debt of coffee farmers. These programs mainly benefit the medium and larger farmers who receive formal credit. At the same time, some of these countries are starting to embark in longer-term projects to diversify, renovate their coffee plantations, improve their marketing and quality of their exportable coffees. However, the main focus of the response so far still remains the short-term solution: keeping producers in coffee by providing support to prices and solving their debt problems. As will be discussed in chapter VIII, most small producers and laborers have not benefited directly form programs aimed at helping the coffee sector.

[12] The total costs and other charges for exporting coffee are estimated to reach up to $17-20 per quintal.

V. STRATEGIES FOR INCREASING COMPETITIVENESS AND DIVERSIFICATION: GENERAL ISSUES

54. As pointed out in previous sections, the coffee sector is an important component of the economies of the Central American nations in terms of employment and exports.[13] The heavy reliance of Central American economies on coffee renders them vulnerable to market downturns and to the competitive pressures that exist in the industry. The coffee crisis has actually been "brewing" for some time now, but has recently percolated throughout Central America as the reality of far reaching structural changes in global coffee production and marketing are being recognized.

55. The current coffee crisis in Central America presents a major challenge for improving overall competitiveness of the countries' agricultural sectors in the global economy. While there are strategies that could be taken by the coffee industry in Central America to improve on the current situation, these are unlikely to result in a quick recovery of world prices or farms' profitability. Non-competitive coffee producers may have to switch, partially or totally, to other agricultural or non-agricultural enterprises for their livelihoods. In turn, their laborers and others engaged in directly linked economic activities will also need to identify alternative livelihoods.

56. Past attempts by governments to buffer domestic producers through different schemes aimed at supporting and/or stabilizing coffee prices are being phased out, and financial bailouts (for producers receiving credit) are also less forthcoming. As a result, producers are more directly exposed to changes in international coffee prices and there has been increased interest in identifying means to increase and/or stabilize coffee-related incomes (Giovanucci, 2002). "Diversification" is often been mentioned as a solution to the problems of low and/or fluctuation coffee prices. However, when the term is loosely used, it really means that producers need to "change" their existing activities. To identify appropriate strategies it is important to understand the different ways that coffee producers can "diversify" or "change" their activities to achieve higher and/or more stable incomes.

57. There are different ways to increase and stabilize incomes of farmers through diversification (see Barghouti, Timmer, Siegel, 1990; Barghouti, Garbas, Umali, 1992). It is possible to diversify *within* coffee and diversify *out of* coffee. However, to avoid confusion with the term diversification, in this paper we will refer to diversification within coffee as "increased competitiveness" and diversification out of coffee as "diversification". Of course, it is also possible for coffee producers to opt for a diversified strategy that combines increased competitiveness within coffee along with the introduction of other activities.

58. An important aspect of strategies aimed at increased competitiveness and diversification is to increase the flexibility of crop and livestock systems and the allocation of household labor and capital so that changes in activities, technologies,

[13] Relative to the other Central American countries, coffee and the agricultural sector are less important in the overall GDP and exports for Costa Rica.

enterprise mixes, and financial and marketing arrangements can be undertaken in response to changing market conditions at relatively low transaction costs (Barghouti, Timmer, Siegel, 1990; Timmer, 1992). As Timmer (1992, p.37) notes: increased competitiveness and diversification are processes of change over time, and not the setting of specific production targets. Raising (and stabilizing) incomes of agricultural producers is (are) the goal(s) – not increasing production statistics. The processes of increased competitiveness and diversification need to be demand-driven because the major bottleneck is not usually supply constraints. Instead, the processes of increased competitiveness and diversification depend on linked activities in processing and adding value through quality improvements, improving financing and marketing arrangements, and post-harvest practices. As a process of change over time[14], in the short-term it is important to exploit the strengths of existing farming systems and introduce incremental changes before attempting to introduce radical far-reaching changes.

59. A point of clarification needs to be made between the terms diversification and specialization. One of the basic tenets of economic theory is the gains (i.e., increased returns) achieved through specialization according to comparative advantage. However, specialization (and higher returns) can lead to higher exposure to risks (e.g., greater variability of returns). Thus, there is a potential risk-return trade-off that might encourage some diversification and/or the use of some risk management strategies (see Siegel and Alwang, 1999, p. 23-41). Another point of clarification is that costs and benefits of specialization and diversification need to be considered at the farm/household level along with community/regional and national levels. It is also quite clear that specializing in a very profitable activity might make economic sense, while diversifying into activities with low profitability is not such a good choice. Finally, it is important to recognize that specialization and diversification strategies can have significant social and environmental impacts at the different levels. The potential dangers of specializing on one or a few agricultural commodity crops has long been recognized and efforts to promote diversification are not new to Central America or to coffee producers. Over the last thirty years, efforts to promote diversification at different levels have been made and have had varying degrees of success in the region.

60. In this paper, attention is focused on producer efforts toward increased competitiveness and diversification (with most of the attention devoted to increasing competitiveness). Given the persistent emphasis in this paper about the different types of producers and types of agro-ecological conditions in which they are located, it is critical to acknowledge that there are very different opportunities and constraints facing different producers and the economic, social and environmental impacts of their decisions will differ, too. And, there will be "winners" and "losers" among different economic agents, communities and regions in the respective countries and among the respective countries. Clearly, this justifies further analyses into issues of increased competitiveness and diversification that are beyond the scope of this paper.

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[14] Just as this paper acknowledges the "structural changes" taking place in the global coffee market, it is critical to acknowledge that responses to these structural changes require a "structural adjustment process", that can be "painful".

A. Increased Competitiveness– Outlining the Options

Increased competitiveness can include activities such as:

1. Changing how coffee is produced – adoption of improved production technologies to increase productivity and/or quality of the product. Also, improving overall returns from land use through inter-planting with other crops and livestock.

2. Changing business relationships in the financing and marketing of coffee – using alternative financing and marketing arrangements including alternative organizational structures (e.g., cooperatives, associations) to lower transactions costs and to increase value added received by producers. Also, use of risk management instruments to enhance financial and marketing arrangements.

3. Changing the form of the final coffee product – adoption of new and improved post-harvest technologies for coffee (e.g., processing, packaging, storage, transport) that adds to the net value of coffee for producers.

4. Identifying alternative uses for coffee – identification of processing technologies that convert coffee into new "coffee products" (e.g., iced coffee, coffee candies and confectionaries), eco-tourism based in coffee growing areas, or new products unrelated to coffee per se (e.g., using various coffee by-products).

61. Thus, there are several options for increasing the competitiveness of producers by changing technologies mixes and marketing/financial arrangements and post-harvest practices. These options are not easy to carry out, but do have the advantage of allowing producers to continue "specializing" in coffee production. In this paper, attention will be focused on different strategies for increasing competitiveness in coffee (Chapter VI) – as opposed to diversification (Chapter VII).

B. Diversification-Outlining the Options

62. Diversification means changing what is produced on the farm – switching to alternative crop and livestock enterprises on the farm. But also, diversification means changing labor/capital allocation to off-farm activities – switching to agricultural and/or non-agricultural activities off the farm in the area or through migration (temporary or permanent).[15]

63. Thus, diversification includes any agricultural activity or practical combination of activities not related to coffee production that will generate positive net income on the farm. For non-competitive coffee producers, diversification could be a viable alternative to achieve economic sustainability in the medium to long run. The term "non-competitive" is used here to describe coffee farms that cannot compete in world markets,

[15] Some coffee producers might even decide on selling or abandoning the farm.

either because their agroclimatic conditions or cost structure does not allow them to be profitable when competing in the "commodity" segment of the market or because they cannot produce coffees to compete in the "high quality" segment of the market.

64. The actual strategy selected – either increased competitiveness of diversification - to be pursued in any country will depend on the structure of the coffee sector (e.g., producer profiles, technologies, skills mix of agricultural laborers), agro-ecological conditions of different producers, the public sector's agricultural support services (e.g., research and extension), transport and communication infrastructure, the private sector (e.g., financial and marketing sectors) and the regulatory environment, etc. It is critical to emphasize the dangers of adopting a strategy of "picking the winners" or, equivalently, of "picking the losers" (see Barghouti, Timmer, Siegel, 1990). For example, there has been some discussion about trying to phase out coffee production at altitudes under 800 meters, or to try and promote vegetable and flower production as an alternative to coffee. It is important for governments to provide the enabling conditions for producers to make the "right" decisions, while eliminating distortionary signals and improving the overall competitive environment for the agricultural and rural sectors. This is a critical message.

65. One issue to consider is that at this stage it may be difficult to start considering the possibility of growing alternative crops that require different skills, machinery and equipment, support services, etc. Instead, part of the strategy should be to identify alternative markets for coffee, and consider options for new markets, including transforming coffee into higher-value products. At this point in time it maybe more realistic to make incremental changes in farming and post-harvest practices (aimed at increasing productivity and the quality of outputs), and more sophisticated efforts in marketing and financial arrangements, including improved post-harvest processing, storage and transport technologies and arrangements.

66. For either improving competitiveness in coffee or diversifying out of coffee, the public sector can have an important role in providing public goods such as information (e.g., research and extension) and infrastructure. The private sector – both domestic and foreign - should take the lead in identifying opportunities and facilitating the adoption of appropriate technologies and arranging for financial and marketing arrangements. What might be needed are *match-makers* (e.g., firms with knowledge of local conditions and links with domestic and foreign entrepreneurs) who can identify opportunities and help match private sector firms with producers and producer groups.

67. The public sector needs to make sure that macroeconomic conditions and legal framework are conducive for domestic and foreign firms. Also, the public sector needs to continue investing in transport and communication infrastructure to lower transaction costs and increase competitiveness. Some of the investment in transportation and communication infrastructure could be coordinated at the community level, along with investments in infrastructure for improved water and sanitation, and improved education and health as part of a comprehensive broad-based rural development strategy.

VI. STRATEGIES FOR INCREASED COMPETITIVENESS

A. Improving Quality, Value Added and Marketing for Coffee

68. By adopting a quality orientation that differentiates their coffees, Central American countries can improve their overall position in international markets through enhanced reputation and higher differentials relative to the New York Board of Trade "C" contract that sets the benchmark market price for these coffees. However, even with some improvements in quality, success is by no means guaranteed. Many countries struggling with the low market price that is now intrinsic to their common positions as raw material suppliers are seeking to advance in the same direction. Even Brazil, the world's largest supplier of coffee as a commodity, is consistently investing in improved quality. Any country strategy must take into account the competitive direction of the market leaders.

69. Although quality may be the *sine qua non* of Central America's coffee future, there are also other ways by which it can differentiate itself and seek competitive advantages. To be able to enter, and develop the emerging higher revenue segments of the market with differentiated coffees requires the development of value-added strategies and marketing that distinguish Central American coffees from those of other parts of the world. This will require a serious commitment to invest and move forward quickly in order to establish an early advantage over competitors before the field gets crowded. It will also require a wide scale sectoral commitment that includes both government and the private sector in order to maintain a consistent focus over the years it takes to build a unique position or "brand" recognition for the country. Before designing such strategies it is important to understand the characteristics and trends of the consuming markets and where demand is trending.

70. Currently the differentiated or specialty markets import roughly 6-8 million bags[16] representing about 7-10% of the developed markets[17] and slightly less of total world consumption. However these coffees represent a much larger percentage of profits. In the U.S. for example the specialty coffee markets accounts for less than 20% of actual green bean imports but nearly 50% of coffee sector profits. A significant proportion of Central America's production could potentially access these markets. Although not all producers would be capable of participating, for some producers, especially smaller ones, the increased income - ranging from 5% to 100% above market prices - would be appreciable. Although at today's prices a producer that can sell certified organic and fair trade would double his income, these markets are still relatively small and such extra margins are unlikely to remain at that level for more than a few years.

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[16] This figure represents an estimation of those coffees that are differentiated, free of noticeable defects, and perhaps paid a premium at origin.

[17] Primarily North America, western Europe, and Japan that buy nearly all of these coffees.

70. Finally, an important issue related to improved competitiveness is the ability of farmers to deal with price uncertainty. Ways to reduce price uncertainty could be provide greater flexibility in marketing of coffee, improve access to financing and could also perhaps contribute to better terms of financing.

A.1 Improving Quality

71. The structural nature of the coffee crisis, the relatively high importance of the sector in Central America, and the impact of the crisis in the poverty of hundreds of thousands of families in the rural areas makes development of the rural economy the centerpiece of strategies to overcome the crisis. Supporting quality improvements in regions with potential is a centerpiece of a strategy to cope with the current crisis. This need to be supported with appropriate promotion and marketing, and effective public policy and investment instruments, private investment, and backing from civil society and NGOs.

72. A strategy that supports quality improvements is key for Central America for several reasons. First and foremost, because of the favorable agro-ecological conditions of the Central American highlands, the region has a comparative advantage in this segment of the coffee market. Second, consistent quality coffee fetches a price premium. Third, improvements in quality can also drive increases in consumption. Finally, improvements in competitiveness, such as improving coffee quality, may have positive externalities in the agricultural and rural sector.

73. Improvements in quality offer other benefits as well. Increasing quality can help national coffee sellers develop and strengthen their long-term relationships with exporters, importers, and retailers, and increase their ability to negotiate prices, including premiums for quality. This will empower national coffee sellers. Improving quality can also help national coffee sellers develop direct links and access to international markets.

74. The IDB/WB/USAID (2002) discussion document identified four steps in a strategy to promote quality coffee in Central America. These are:

- *Understanding and evaluating the quality of coffee* in terms of its attributes and market preference;
- *Identifying the key problems* that affect quality and its consistency throughout the entire production chain;
- *Defining the alternatives for overcoming these problems;* and
- *Determining public policy and investment instruments and private investment* that will facilitate the adoption of such alternatives.

75. In evaluating quality, a key issue according to the study is improved education of farmers and establishment of local cupping laboratories in producing regions. Physical evaluation and cupping are procedures performed by coffee importers on samples that they receive before shipment. One key element to improving and maintaining quality is developing the capacity to evaluate coffee with the same standards as the buyers. In

addition to this, assuring commercial consistency in lots and confidence in delivery, are essential to developing long-term relationships with buyers.

76. According to the same study, improving quality has two main areas: (a) improving quality in primary production; and (b) improving quality in coffee milling (beneficio).

77. The key elements in improving quality in primary production involve:
- Adequate preparation of coffee before and during harvest. This involves appropriate cultural and harvesting practices to ensure quality.
- Incentives for producing quality coffee in terms of a compensation system that recognizes and reward quality differences and effectively transmits price signals to producers.
- Improvements in transportation so deter quality deterioration during transport of cherries to the wet mills or coffee coming from wet mills.
- Support of producer organizations in developing organizational and cooperative approaches that will help improve managerial problems and improve quality. For example producer organization can disseminate quality standards and best practices in coffee farm care and harvest.
- Support the production of differentiated coffees by supporting necessary extension, training and certification of these coffees.

78. The key elements in improving quality in coffee milling include:
- Investments in appropriate equipment and practices to protect and enhance coffee quality.
- Cupping laboratories and training sessions established at the coffee mills to better evaluate the quality.
- Strengthening and business and marketing practices at the mills so they better promote quality coffee and transmit rewards to farmers who deliver better quality.

A.2 Increasing Value-added

79. For decades, most countries have passively accepted their role as a supplier of green beans in world coffee markets. Meanwhile, on the demand side of the market, roasters have shown a remarkable capacity to add enormous value to green beans, by targeting increasingly segmented and fragmented consumer markets. As a result, multinationals and firms in consuming nations have captured huge downstream margins. Meanwhile, producers' share of total value has declined considerably: from approximately 30 percent to less than 10 percent in the last two decades. To increase their share of total value and to add value, producers need to simultaneously develop downstream supply chain linkages and pursue promotion strategies that feature their coffee's comparative advantages. Following are some approaches and some cautions for Central American producers to consider:

80. ***Working with retailers.*** Certain countries could work directly with retailers. Indeed, retailers' ability to develop private labels and otherwise bypass the traditional trading channels is fast emerging as a critical competitive factor. Such labels are taking a fast-increasing share of grocery sales, even at the high-end of the market. Moreover, they do not require costly market entries or direct competition with current buyers. But there are demanding requirements in terms of quality, packaging, and "jut in time" fulfillment that could be a difficult hurdle. Thus, only the more organized producer groups and associations will have the capacity to deal with retailers directly.

81. ***Reducing dependence on middlemen***. Among the various methods to increase the overall share of value added, one of the simplest and most frequently discussed is the reduction of intermediation---depending less on the middleman. While this has obvious appeal, inexperienced farmers or farmer groups should consider it with caution. Middlemen, although often derided, have been shown to perform valuable and sometimes very cost-effective functions by providing credit, agglomerating volume, finding buyers, and providing transport---all with considerably more efficiency and tolerance for risk than many farmers. Many producer organizations often do not have the skills, capital, or dedicated personnel to take on the market oriented roles of middlemen. Although training individuals in such organizations may be helpful in terms of achieving market transparency it is often a difficult and lengthy process for them to become effective at other market intermediation roles. An alternative could be to combine the resources of more than one organization into a second-tier or apex group that can then hire the person(s) with the appropriate skills, dedication, and time available to conduct those functions as a formal business.

82. ***Capturing product-oriented value by marketing processed or transformed coffee*** (for example, soluble or roast and grind) can require considerable expertise and investment, particularly if the target market is overseas. Process-oriented value (Organic or Eco-certification) can be less costly and in the long run has the distinct advantage of providing a higher percentage of benefits and income directly to the producer. This is because, whether a coffee is roasted domestically or overseas rarely affects the price the producer receives. Another producer-oriented way of capturing value is to exploit Geographic Indications of Origin (GIO) or appellations that distinctly connect quality/value to a particular and specific origin. Often large companies and multinational are involved in the transformation and distribution of processed coffee and products and appropriate alliances could be one way to go. Some companies in Central America are entering the markets for processed coffee products, such as for example Costa Rica's Café Britt. Colombia's launch of its soluble coffee and soft drink type of products can also serve as a useful example of the process and investments necessary for the successful launch of processed coffee products.

83. ***Brand recognition*** is a valuable asset in an increasingly competitive coffee market. Brands are essentially a symbolic embodiment of reputation. Indeed some countries have taken great pains to be perceived as a brand. Colombia is the perfect example and its logo and trademarks are widely recognized. Colombia's achievement was not a simple one. It has involved 50 years of coordination at the level of field quality, national policy,

and consistent promotion. It has further involved a long-term commitment to multimillion dollar promotional budgets. But programs do not need to be so grandiose in order to be successful. Several smaller Central American brands have already achieved a measure of market recognition and success.

84. There are some clear rules and lessons of brand development. They require long-term investment and a strong commitment from all of the stakeholders involved in developing them. For producers that feature coffees with Geographic Indications of Origin, this means a coordinated quality commitment throughout the appellation that is necessarily born of a strong organizational structure. That structure is vital in order to provide adequate information and technical training to the farmers in that circumscribed area and to monitor compliance with the quality requirements of the appellation or brand. Government needs to support the mapping and development of adequate geographic indicators and must also enforce the regulations protecting them.

85. Appellation-based brands initially require considerably more work to develop than a label or logo drawn up by a marketing agency. For example, appellations require terrain analysis, stakeholder negotiations, legal definitions and regulations all of which take patience, resources, and commitment. However, in the long run, they may also be more beneficial to the local farmers who share ownership. Invented labels, unlike a specific terrain, are easily copied or improved upon and, like fashions, can come and go. Appellations on the other hand are the property of local owners who can therefore capture much of the value themselves in this feature, perhaps more than any other, may make them more sustainable. Guatemala has already defined seven appellation regions for its coffees (Antigua being the best known) and this partly explains the premiums it receives.

A.3 Promotional Strategies for Coffee

86. Given limited promotional resources and the changing levels of competition, marketing efforts must be judiciously targeted and professionally developed. The most efficient approaches focus on relationships such as roaster visits and trade shows, rather than on untargeted advertising. Some useful promotional strategies such as E-Trade and business development, internal consumption campaigns, and Market Information Systems (MIS), are already being tested and utilized in the coffee trade.

E-trade, auctions, and the "Cup of Excellence" competition.

87. Internet-based coffee auctions have been tested for two years with some notable success, albeit on a very limited scale. In the most notable B2B trade to date a Norwegian firm paid $11.00/lb for a small lot of Las Nubes green beans (winner Cup of Excellence, Guatemala 2001) and the 2002 Nicaraguan auction brought an even higher price for one of its coffees. Brazil's e-auction of 54 tons of its better coffees fetched prices as high as $2.60/lb last year. Brazil, Colombia, Guatemala, Nicaragua, Panama, and Uganda have been early leaders in this field that is about to get bigger. Businesses like Comdaq are providing solution platforms for developing coffee e-commerce. Experience with the "Cup of Excellence" program is the most extensive and it is one template available to

producing countries that want to encourage quality improvements and quality recognition for their coffee producers.

88. The Cup of Excellence is recognized internationally as a coffee cupping event that is designed to identify and promote the best coffees (within a given country) through a series of blind cupping conducted by national and international judges. The judges evaluate every detail of the coffee from aroma, acidity, to body and balance. Such competitions are a testimony that emphasis on coffee quality through improved farm practices combined with the installation of model cupping laboratories can lead to significant behavioral changes. Competitions like the Cup of Excellence can improve the image of a country in international markets. Three cup of excellence competitions have been conducted so far in Brazil, Guatemala (2001) and Nicaragua (2002) with more countries negotiating to do so in the future.

89. The Internet can be used for more than just traditional marketing. The ability to share new forms of information can expand the possibilities to include support systems for land use monitoring, certification, and Geographic Indications of Origin (GIOs) or Appellation. One pilot program funded by USAID/Peru is successfully testing these possibilities online. Their mapping system serves as a prototype for the SCAA denomination of origin/marketing partners project.

Market Information Systems.

90. Information is the lifeblood of efficient agricultural markets. The availability of accurate price and other market information helps reduce risks and transaction costs and better enables market participants to plan and coordinate their production and trading activities. Market information is a public good and offers valid arguments for it to be jump-started with public funds. However, around the world, many efforts to develop public sector Market Information Systems (MIS) have failed. Most MIS's have lacked commercial utility and have been unsustainable (Giovannucci, 1999). To avoid the most common factors for failure, four issues must be addressed: (a) funding and training are needed to ensure private, non-governmental management; (b) cost recovery mechanisms must be devised; (c) the systems must be established on a modest scale, at least initially; and (d) a participatory process is needed that is user-defined and incorporates feedback.

91. A good example of a sophisticated MIS is an evolving project that is developing information on "green" markets and is operated by Centro de Inteligencia Sobre Mercados Sostenibles (CIMS). It is based in San Jose, Costa Rica under the aegis of INCAE[18], one of Latin America's leading academic institutions. All Central American countries can use this system and even a more modest coffee-oriented system could also be effective.

92. Organizations like cooperatives and trade associations can be excellent conduits of specialized market information, particularly if they are trained to manage and disseminate it. Indeed, this is a significant service they can provide their constituents, but one that has proven difficult to manage and sustain without efficient organizations. Valuable market

[18] info@cims-la.com

information is also passed through market alliances and is another reason to support integrated supply chain development.

Agro-tourism and Eco-tourism.

93. In addition to improved sustainability, farmers in some areas could also benefit by combining shade-grown organic coffee production with eco-tourism. The natural coffee production areas have been proven to draw increased numbers of birds and wildlife. In some rural areas, eco-tourism can be more economically important than agriculture. Coffee-growing areas in El Salvador, Mexico, and Colombia are already associated with national parks. Indeed El Salvador recently launched a small National Park dedicated to diversifying coffee production models (particularly eco- friendly) and educating people about coffee growing. Their intention is to create a multipurpose tourist haven that includes recreational facilities and food outlets. Furthermore, a European trend that has spread to other parts of the world, including Costa Rica, is agro-tourism. Diversified and well-managed coffee farms lend themselves to this concept and could be prime tourism destinations.

Increasing domestic promotion and consumption.

94. One of the opportunities that emerge from a low price global market is the development of domestic markets. With adequate stimulus, the results can be very worthwhile. A prime example is Brazil. It struggled for years with modest per capita consumption rates. In the early 1990s some of the lower quality coffee that was commonly sold throughout the country began to be replaced with smoother and more flavorful coffee. Until then, much of the available domestic coffee was sold primarily on a price basis and often included triage, coffee hulls, and assorted non-coffee fillers. This change in product quality was accompanied by a series of promotional campaigns directed at various segments of society, including the young. Domestic consumption responded dramatically. Now Brazil has increased its per capita consumption and has increased its domestic markets so successfully that it is second only to the United States among the world's major consumers of coffee. Brazil's per capita coffee consumption is at 4.6 kg, compared to 2.3 kg for Colombia and 2.1 kg for Central America as an average (but noting that per capita coffee consumption in Costa Rica is as high as 3.7 kg).

Table 6.1 Central America: Coffee Consumption

	1991	1995	1999	2000
Consumption as a percentage of Production				
Costa Rica	13.6	8	12.4	11 1
El Salvador	8.2	10 4	5.4	8 9
Guatemala	8.6	7 7	5 8	6.4
Honduras	11.1	8.4	5 6	8 6
Nicaragua	19.5	11.3	8 5	13 5
Central America	10.9	8 8	7	8.9
Per capita coffee consumption in kg/person				
Costa Rica	7.2	3.6	4.6	3.7
El Salvador	2.1	2 9	1 5	1.5
Guatemala	2	1.9	1.6	1 5
Honduras	3.1	1 7	1 6	2 1
Nicaragua	2.1	1.5	1.6	2.6
Central America	2 9	1.9	1 9	2 1

Source: Estimates using data from ICO and CEPAL

95. Moreover, among the many direct and indirect participants in the coffee industry, increased internal consumption of better quality coffee can improve familiarity with the characteristics of good coffee. This can arguably help contribute to improvements in production quality.

96. The good news is that consumption can certainly be improved and there is some evidence that better quality is associated with higher consumption rates. Unfortunately modest attempts to pursue this model in Colombia have not proven to be very successful. This could be due to Colombia's already relatively high quality of domestic consumption and that the modest attempts were made during a period of economic recession and during a period of high global prices when much of the focus was on moving good coffee out of the country.

Producer oriented promotion.

97. Improved market prices and market access are not the most important basis for deciding to adopt improved or differentiated production methods. Indeed, it is vital that promotional policies focus on the local benefits---rather than the price premium or market benefits, which may be evanescent. Organic, Fair Trade, and eco-friendly coffee can offer considerable environmental, social, and even health benefits to growers and their communities. These include: (a) shade trees, use of organic fertilizers and composting to help preserve the soil structure, thereby preventing erosion and protecting watersheds; (b) organic husbandry supports biodiversity especially in microbial life that provides natural control of pests and pathogens; (c) organic methods improve nutrient recycling and enhance soil quality/fertility; and (d) soil management and localized input methods provide very useful risk management especially for poor rural smallholders.

A 4. Managing price risk and volatility

98. Coffee farmers face at least two distinct sets of problems associated with prices: the outright price level, and volatility. Historically, coffee prices have been among the most volatile of all commodity prices. Price volatility was particularly pronounced during the 1990s, and is expected to continue, together with the downward tendency in coffee prices. Volatility is the result of an inelastic demand curve and supply shocks, mainly caused by past production disruptions in Brazil (mainly because of frosts), production adjustments in response to price increases, and policy changes (such as the suspension of the economic clauses of the International Coffee Agreement).

99. Cyclical price volatility, particularly within the crop season, can be managed through price risk management instruments. However, the secular price trend requires other longer-term elements, such as diversification or improvements in quality and productivity.

100. Speculative behavior also needs to be addressed. This was one of the sources of the banking problem. In the past, many farmers chose not to fix coffee prices, even after their crop was exported; rather, they retained speculative futures-linked positions with exporters. The lack of coverage in a period of decreasing prices led to the reduction in their ability to repay their loans.

101. Tools to manage price volatility already exist. However, small and medium-size agricultural producers in developing countries are, in general, unable to access them. Impediments to their use by producers include inappropriate instruments to suit their needs, high transaction costs, and little understanding of their use. Additionally, in the developed world, many producers frequently do not access risk management instruments directly, instead they access them indirectly through processors and traders. Some options to manage lower and volatile prices are described below.

102. Ways in which coffee producers can get access to risk management markets are the focus of studies underway in El Salvador and Nicaragua. Two key issues are to develop competent aggregators of risk management instruments, and to examine ways in which risk management instruments can help imrpove access to credit. Local aggregators for demand for risk management instruments could be producer organizations, cooperatives, rural credit institutions, and traders. Preliminary results indicate that it is critical to strengthen the capacity of producer organizations and cooperatives to deal with price risks and improve their marketing of coffee. Approaches being explored are:

- *Linking price insurance to a loan agreement.* A farmer who borrows with price insurance should be a better credit risk than one who borrows without it. From the perspective of the lender, a portfolio of debt that is insured should strengthen the lending institution. It should also improve the flow of credit for farmers who agree to buy price insurance. This arrangement may be useful to countries seeking to improve the flow of credit to coffee (and other agricultural) sectors.

- *Adopting sales management techniques,* such as hedging strategies, for cooperatives that manage sales on behalf of their members. These techniques could have a double benefit. They enable a cooperative to pay a higher initial proportion of the market value of the coffee to a producer. They also protect the ability of the cooperative to make payments in the future.

- *Using inventory management.* Cooperatives and other producer organizations may not wish to sell all their coffee immediately after harvest. This way, they can spread their sales more evenly throughout the crop year and take advantage of price rises later on. This provides a level of flexibility in selling. Price risk management could allow producers to protect the value of their inventories from unexpected price declines during the crop year.

- *Aggregating quantities for hedging,* so even farmers with a relatively small quantity of a commodity can enter into purchase contracts. Processors, traders and cooperatives can play a useful role in this regard. Tools like this have arisen in developed countries, along with sophisticated purchasing contracts that have risk management tools embedded in them. Entities able to provide this type of purchasing arrangement rarely exist in the developing world. The potential for developing them needs to be discussed.

- *Using guarantee contracts.* There are arrangements in place between farmer organizations and users that provide price protection to these farmers; Fair Trade is one of them. Fair Trade guarantees a price to farmers that is not only higher (around $1.20 – to $1.30 per lb., when prices are $0.50 to $0.60 per lb.) but also fixed. This is another effective way to provide price protection to coffee producers.

103. Programs should be linked to technical assistance packages designed to assist farmers in understanding the role and operation of forward and physical markets, as well as the positive impact of price risk management instruments. The World Bank is currently working in two pilot projects in El Salvador and Nicaragua which examine ways in which coffee producers can get access to price risk management markets. Two basic ideas are being explored. Firstly, working with cooperatives that manage sales on behalf of their members – sometimes in conjunction with offering to buy the coffee at a minimum price from the producers – to develop sales and hedging strategies designed to reduce the risk in their activities, and a second approach which is to attach price insurance to a loan agreement.

104. In the first case, the adoption of risk management techniques enables a cooperative to pay a higher proportion of the market value of the coffee to a producer whilst protecting its ability to make subsequent payments. In the second case, the a farmer who borrows with insurance should be a better credit than one who borrows without it. From a lenders perspective, a portfolio of debt that is insured should strengthen the institution, but it should also lead to a situation where farmers who agree to buy insurance should have better access to credit.

105. In addition to price risk, there are other risk related to coffee production. These include:

Weather risk management. Weather often has an impact on coffee yields. Recent developments in weather-based insurance could allow producers to obtain protection against severe weather events such as hurricanes, mud slides, excess rain, or drought. Weather-based index insurance is based on the occurrence of a certain event that can measured and verified independently. This lowers administrative costs and reduces the usual of moral hazard and adverse selection problems often associated with traditional crop insurance (see Skees et. al., 2002).

Risk management and environmental sustainability. Sustainable production methods incorporating soil management and localized input methods can also provide useful risk management support, especially for poor rural smallholders. These methods diminish costly dependence on agrochemicals, reduce the impacts of drought, and encourage on-farm diversification for food security and income protection.

B. Parameters for Successful Development of Coffee Initiatives in Central America

106. Many successful coffee initiatives have three things in common. They achieve a measure of market success, empower farmers to reduce poverty levels, and do so while enhancing rural natural resource management. They also share a process-oriented approach that is somewhat innovative for rural projects. Recent experience in coffee related projects sheds light on viable best practices as well as significant cost and management issues that can be applied to new initiatives. The World Bank has managed four GEF financed coffee projects in Uganda, El Salvador, Mexico, and Nicaragua. In addition to these projects The World Bank Group has supported innovative financing mechanisms for the shift to ecologically friendly production methods and is now developing a carbon sequestration project could in the long-term provide substantial incentives for smallholder participation in eco-friendly coffee growing (see chapter IX for details). Other donor or government funded initiatives in Costa Rica (*organic cacao CIMS, government coffee certification*), El Salvador *(coffee cluster and GTZ programs*), Mexico (*various*), and Nicaragua (*USAID cupping labs and Competitiveness Learning and Innovation Loan*) have also contributed useful lessons about what works and what doesn't.

107. Three main characteristics distinguish the more successful initiatives: market orientation, organizational development, and environmental awareness.

Market Orientation.

108. Although this is an obvious feature to most project designers, it is rarely well-designed. While some projects include provisions for marketing, they rarely include the appropriate expertise to guide the a) market development, b) planning, and c) execution. One of the most successful shortcuts in this category is the integration of private sector coffee buyers.

Organizational Development.

109. The unit costs of reaching producers directly are simply prohibitive and therefore credible and representative organizations are needed to lower transaction costs. There are examples of projects that have created producer organizations for the purpose of the project and these tend to not survive. The quality and capacity of local organizations and associations is a critical factor in the success of any project. Unfortunately, most producer organizations are inadequately assessed for their capacity to participate effectively. As a result, projects are stalled, monitoring costs skyrocket, and shortcuts are eventually cobbled together in order to get by and proceed. There are probably only a handful of Central American cooperatives that require no institutional support and training in order to be effective partners. Therefore, projects must incorporate institutional support in the form of: a) improving management capacity; b) initiating or strengthening internal accounting systems; c) strengthening democratic process through representativeness, information flow, and formal legitimacy.

Environmental Awareness.

110. In a region where agriculture is recognized as the number one threat to biodiversity, coffee represents one of the easiest ways to combine agricultural gains with environmental gains. Indeed, the market is rewarding environmentally friendly processes such as organic production. Unfortunately, a plethora of environmental seals, certification agencies, and marketing claims can be confusing. Choosing and managing the appropriate certification processes become important factors for success. It is also important to understand both the upfront costs and the ongoing maintenance costs and requirements. Often, certification is necessary to provide the market incentive that ensures growers continue to follow the prescribed guidelines. While certification may be the starting hook that ensures the farmer's adherence to environmental principles there is early evidence of a more sustainable method. Involving the farmer in an interactive educational process about the real and localized benefits of sound natural resource stewardship may well be a better long-term investment.

C. Central American Supply in Relation to the Differentiated Markets

111. Central American countries have long ago staked out a different competitive arena. A differentiation strategy has worked particularly well for Guatemala that exports about half of its production as a differentiated non-commodity product. Costa Rica differentiates about 40% of its exports . Both are capable of expanding this percentage. While it would take a number of years for the other countries to reach similar proportions of their production as differentiated coffees, several have significant potential.

Costa Rica

112. Costa Rica has achieved a distinct market perception of being eco-friendly and this can be a considerable advantage, especially if it is leveraged to include other agricultural products. Its reputation is so well-established that it can be surprising to note that the percentage of certified organic or eco-friendly agricultural products that it exports is actually quite small. On the other hand, many of its processors already use relatively clean technology. ICAFE is attempting to introduce a law that will permit processors to

more effectively differentiate and help reward the quality of the coffee they receive. The previous government had also announced a "sustainable" coffee seal that would be granted to eco-friendly growers that parallel some of the guidelines outlined in Starbucks' Preferred Supplier Program.

113. Costa Rica has a high percentage of quality coffee production approximately 43% of which is sold in the gourmet channels. It has already established considerable credibility in the gourmet market with brands like La Minita and appellations like Tarrazu. Although it is one of the few exporters of organic chocolates, it exports relatively little organic coffee, no certified eco-friendly coffee, and 16,000 bags of fair trade coffee that represents about 1% of its total exports. It has registered capacity to export more than 41,000 bags of fair trade coffee. There are obvious advantages for Costa Rica to pursue high-quality gourmet coffee as well as fair trade, organic, and eco-friendly certifications.

El Salvador

114. El Salvador bears the dubious distinction of being the most deforested country in the region with less than 10% of its original forest cover remaining. The great majority of this remaining forest is either part of or contiguous to coffee farms. Therefore, maintaining these coffee farmers is almost synonymous with maintaining the country's remaining scarce forests. A GEF financed project by focusing on this issue has managed to not only sensitize the country to its dilemma but also impact national coffee policy to include more eco-friendly options such as the Rainforest Alliance certification that the project piloted. It's eco-friendly certification project has given some of its coffees a first mover advantage into the U.S., Japanese, and Taiwanese markets. Unfortunately these quantities are small (1000-2000 bags) and still show only modest growth as market acceptance is limited.

115. Only about 5% of its coffee crop is differentiated production destined for the specialty market with the majority flowing into common commodity channels. For several years the country has promoted its high-quality gourmet offerings and even developed an appellation and an umbrella brand (Itzalco). At least 11,000 bags of its production are immediately certifiable as organic and exported 4,600 bags in 2001. Although it has the capacity to export approximately 12,000 bags of fair trade coffee it has not done so in recent years reportedly due to low quality issues. Although there was a report of 6000 bags exported at fair trade prices in 2001, these were not officially registered.

Guatemala

116. It's notable advances in quality and promotion have been well recognized with price premiums that are consistently higher than most other origins; for example April 2002 averages are more than 5% over Colombian spot prices. Approximately 40-50% of its exports are destined for differentiated market channels. It promotes 7 distinctly regional coffees and several differentiated subcategories. Guatemala also participated in a small Internet auction that yielded world-record prices for one producer. It exported more than 10,000 bags of organic coffee in 2000 and has at least 35,000 bags of production that are

immediately certifiable as organic. Among its exports that year 22,000 bags were to the fair trade market (some of these also organic). Its estimated 2001 fair trade production capacity is 60,000 bags. It also had approximately 23,000 bags of certified eco-friendly coffee although it is not clear just how much of this was exported as such. It leads all other Central American producers in sustainable coffee exports. These currently represent less than 2% of its total exports.

Honduras

117. Less than 15% of Honduran production is differentiated from its bulk commodity coffee production. Its older varietals, microclimates, and traditional production methods give it plenty of room for improvement. Although there is an emerging appreciation of quality-oriented cultivation methods, these are far from common. Post harvest management and processing are also weak and altogether these factors serve to castigate the market price for Honduran coffee.

118. It is estimated that less than half of coffee producers use regular fertilization or agrochemicals. In some parts of the country small-scale organic projects have been operational for several years and at least 5000 bags are immediately certifiable as organic. For 2001 its estimated fair trade production capacity was 51,000 bags. 8000 bags were exported in 2000. Its organic and fair trade exports probably totaled less than 11,000 bags in 2000.

Nicaragua

119. About 10% of its exports are currently destined for the differentiated markets yet many experts estimate that it has enormous potential. Quality has improved in recent years and some producers have developed a reputation in the gourmet market. Their six year old Specialty Coffee Association of Nicaragua has developed an affiliation with the SCAA to promote quality. Some of the higher growing regions have considerable unfulfilled potential. More than 10,000 bags of its production were exported as certified organic in the year 2000. In the same year 24,000 bags were exported as fair trade certified. Its 2001 capacity for fair trade is approximately 135,000 bags or 11% of total production.

120. Nicaragua has a number of small-scale development projects including the USAID funded quality improvement project to install quality control and cupping labs in rural areas, and a cooperative development project. In late May 2002 it was the third country to hold a competition for best coffee, like the cup of excellence, and in July 2002 it held an auction for its best coffees that fetched very high prices. Its production systems feature some of the lowest shade tree counts in the region. A recent GEF project attempted to address part of the deforestation issue by introducing solar coffee dryers to prevent the tree cutting that was occurring to feed the energy intensive wood-fired coffee dryers. In one reserve alone (BOSAWAS) 200 hectares of forest were being cleared daily for timber and agricultural production. Other key development programs in the coffee sector are financed by Sweden, Finland, and Norway directed to improve the micro-credit system, avoid the contamination of the watersheds, and educate the producers about Integrated Pest Management practices respectively.

VII. DIVERSIFICATION STRATEGIES

A. Elements of a Diversification Strategy

121. In Section V, an overview of general issues relevant to increased competitiveness and diversification were presented. A goal of diversification is to provide alternatives for those coffee producers who will not be competitive in producing coffee---alternatives that will allow them to keep the farm as an agricultural enterprise, or even include some non-agricultural activities, and/or off-farm activities. Alternatives – especially those supported by public funds - should also consider enterprises that provide employment opportunities for displaced coffee labor, and that promote land (and other natural resources, e.g., water) use practices and patterns that are environmentally sustainable.

122. In addition, non-agricultural economic activities should be promoted in the rural sector for coffee producers, laborers and others. Some ideas include light industry, adventure tourism, social services (health, education, transportation), and technical training (mechanical, woodcraft, plumbing). Another diversification strategy is migration out of the area, to another rural area, an urban area, or out of the country is. Migration and the receiving of remittances from migrants has become a major reality of rural economies in most of the five Central American countries.

123. It should be emphasized that diversification can have potential positive benefits, however only some have been proven in practice and some remain subjective perceptions (Tabora, 1992, p.100). Potential benefits include: a) broadening and expanding the base of economic activity, b) counterbalancing fluctuations in free market economies, c) enhancing resource utilization; d) developing a competitive setting among different sectors that can increase efficiency, e) expanding the employment opportunities in the rural economy, and e) enrich entrepreneurial opportunities for business generation. A diversification program that also attempts to be poverty-reducing needs to be tailored to this specific objective. More thought needs to be devoted ex ante to identifying expected beneficiaries, along with potential losers and/or excluded groups.

What is a "Successful" Diversification Program?

As mentioned in Chapter V, the objective of diversification is increasing and/or stabilizing the incomes of farmers, not increasing production statistics or just changing the mix of production. Besides the farmer income, diversification can impact laborers' incomes and environmental quality. Also, there will be impacts at the regional and national as diversification takes place. Thus, to identify successful models of diversification, it is important to specify the objectives of the program, including expected beneficiaries, and to have appropriate indicators to monitor the results. More attention needs to be devoted to these issues as the Central American countries explore alternative diversification strategies.

124. Clearly, some of these potential benefits go well beyond the profit objectives of individual farmers, and thereby achieving these benefits justifies some public sector support. However, a diversification program for coffee growing areas should start by addressing particular farmer objectives such as, increased and/or more stable income and improved food security. A diversification program should help producers assess the following issues:

- Location: agro-ecological conditions, proximity to transport/communication infrastructure and markets;
- Potential markets for different possible crops;
- Financial needs and available sources of funds;
- Risk management capacity and available instruments;
- Barriers to entry (investment costs, infrastructure requirements);
- Necessary skills and resources (information, technical capacity, financing);
- Environmental and economic advantages for production; and
- Challenges pertaining to commercialization (logistics, quality, quantity).

B. Agricultural Diversification in Central America

125. Diversification out of coffee is not a new concept or strategy for many Central American countries. In a World Bank publication on "Trends in Agricultural Diversification: Regional Perspectives" (see Barghouti, Garbus, Umali, 1992) there is a chapter on the experiences in Central and South America (see Tabora, 1992). For example, in response to the price decline in the early 1980s, Costa Rica looked into other crops such as macadamia, flowers and forestry as alternatives to coffee. El Salvador has initiated a program to promote the production of fruits (Programa Nacional de Frutas) as an alternative to coffee for areas between 600 and 800 meters. In 2001, IICA has produced a study analyzing the appropriate conditions (agro-climatic, soil, technology, markets, etc.) for growing fruits. In Guatemala, the Ministry of Agriculture and the association of exporters for non-traditional products (AGEXPRONT) did a study in 2000 to identify crops that could substitute coffee in lower areas. AGEXPRONT is formulating a strategy and concrete projects to move forward. Furthermore, there is the forestry incentives program (Programa de Incentivos Forestales, or PINFOR) by the national institute of forestry (Instituto Nacional de Bosques, INAB) to assist financially producers who wish to diversify into forestry.

126. In the Tabora (1992) review of agricultural diversification experiences in Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua (along with Chile and Colombia) it was found that different countries took different paths, and have had varying degrees of "success". Some of the major issues and lessons learned:

1) *Technology Development versus Technology Transfer* – New agricultural enterprises need to be tested for adoption, cultural management, post-harvest handling, packaging, storage, etc. and require site-specific technologies and techniques. Should governments support domestic research and extension or

depend on international research centers or foreign companies for this expertise? Different models have been applied (and mixed approaches), with varying degrees of success and failure. Success or failure depend on the specific agricultural enterprise, domestic research and extension capacity (both public and private), and other factors.

2) *Public versus Private Investments* - Both are needed, but might be targeted differently. Many foreign-owned companies helped expand the production and export of non-traditional vegetables, ornamentals, fruits. However, it was found that there were few alternatives that were more profitable or with such extensive and accessible markets as the traditional commodities that were to be replaced. What are the public versus private sector objectives of diversification? Are there incentives for the private sector help poor small farmers and laborers?
3) *Infrastructure Development* – substantial crop diversification has occurred near urban areas and in areas close to major export-farming activities (e.g., coffee farms). Export production areas for major vegetables, ornamentals, and root crops were often located in the proximity of capital cities (and/or ports). This illustrates how integration with pre-established services and facilities, can be more readily tapped without the additional burden of new investment. Also, it points to a potential bias against more remote rural areas and less commercialized farmers (which is the case for many coffee producers).
4) *Insufficient Expertise* – Even if the technology is available and appropriate and all the facilities and support services in place, there is still a need for human capital for managers and laborers in terms of skills mix and entrepreneurial capacity. The lack of human capital has been a major constraint, and clearly places the lower educated small farmers at a disadvantage.
5) *Difficulties with the Export Market* – Export marketing is more complex than marketing domestically in terms of language, logistics, timeliness and technical, business and cultural perspectives of doing business. This has complicated export expansion and is a bias in favor of larger more commercially oriented farmers, who might have experience with export markets.
6) *Inadequate Financial Incentives* – New agricultural enterprises often require longer development periods, new facilities, and a trial period before becoming viable. This requires longer term financing and appropriate repayment rates. Also, there is a need to make sure that sufficient funds are available with appropriate terms for different types of farmers and farmer associations.
7) *Sustainability of Diversification Initiatives* - There is a need for sustained diversification efforts, not just as short-term responses to crises. Successful sustained efforts have been directed by the private sector, though always fully supported in many ways by governments, even as political administrations changed. Diversification is a process not an emergency responses.

Tabora (1992, p.102-3) concludes:

127. "Diversification is really a leap of faith for many investors in non-traditionals. This leap can be cushioned with a supportive government or a large private sector program, which can provide expertise, physical resources, and other facilities to nurture infant

projects... While the private sector possesses the resources to pursue agribusinesses for diversification, the government can be a major supporter in developing favorable policies. New commodities may need special incentives and may require special privileges normal to infant industries. Additionally, because new commodities involve foreign – as well as local – investors who could bring technology, financing, and markets, governments will have to provide an attractive {business} climate p.102-103)."

Agricultural Diversification Programs and Poverty Reduction

Experience in Central America and elsewhere in the world provide some limited examples of agricultural diversification programs that have contributed to poverty reduction – at least for selected groups of households. There was a diversification program in Guatemala in the 1980s that provided incentives for small farmers to shift from low value maize production for home and domestic consumption to snowpeas for export markets. The Guatemalan experience with export of snowpeas shows that farmers received higher incomes growing snowpeas than maize, and that there was more employment for household members and the community. The higher incomes led to increases in household caloric intake and improved childrens' health and nutritional status. In addition, using a crop rotation of snowpeas and maize was beneficial for soil fertility. The largest effect, however, was found to be farmers' confidence, as they became more entrepreneurial and more willing to take risks.

Tabora (1992, p.103-104) concludes: "A successful diversification program is dependent on several factors, but early integration of efforts and long-term commitment are key to advancing technology and expertise, human resource and enterprise development, infrastructure, and foreign investments. Diversification into high-value crops can improve family incomes, health, and quality of life, but real-wage increases are still elusive."

C. Opportunities and Constraints to Diversification

128. There are many potential opportunities for diversification, and many constraints for the respective Central American countries. And, clearly they differ by country, regions within countries, and by types of producers within countries. This message comes out loud and clear in a very informative and detailed report recently completed for USAID entitled "Diversification Options for Coffee Growing Regions in Central America (see Chemonics, 2002)." There are potential opportunities in both domestic and export markets for a wide range of horticultural crops, agro-forestry, livestock, etc.

129. It is not the objective of this paper to outline the many options for diversification that exist – some of which have already been realized – but to point out the constraints that exist, and to highlight some of the lessons learned from past efforts in diversification. There are no easy strategies and options.

Lots of, but Limited Options

In the preface to the Chemonics (2002, p.4) report it states: "It is not possible to discuss all the alternatives but we may discuss the conditions that will limit choices: goats, cattle, sheep are not appropriate for steep slopes, watersheds or forest settings. Altitude and climate preclude some crops: cocoa, melons, sugarcane; the market precludes others such as asparagus."

130. Some of the constraints highlighted in the USAID-funded report (Chemonics, 2002) in the respective countries (which were significantly less in Costa Rica) include:

- Difficult terrains and low soil fertility;
- Lack of available water and/or electricity for irrigation;
- Uncertain and/or contested land rights and tenure arrangements;
- Financial crisis that constrains and or results in high costs of lending for agriculture and rural enterprises;
- Poorly developed rural transport, communication and energy infrastructure;
- Lack of developed port and airport facilities;
- Low literacy and skills levels of rural population; and
- Underfunded and understaffed research and extension systems lacking appropriate skills.

131. Clearly, not all of these constraints can be removed immediately. But, they need to be dealt with, especially if the diversification strategy is to include poverty reduction as one of its major objectives. In contrast, larger more commercially oriented farmers can sometimes circumvent some of these constraints by tapping into their own resources and connections.

D. Some Possible Government-backed Initiatives for Diversification

132. Development of diversification strategy should follow a systematic approach, dealing with both the agricultural and business environment constraints at the same time. As such, it is clear that there is considerable overlap between efforts to promote diversification and increased competitiveness. What is really needed in the Central America countries is a broad based rural development strategy that promotes both increased competitiveness and diversification and provides a safety net for poor individuals and households to help them through this adjustment process. In analyzing the elements that have combined to strengthen agricultural and rural sectors in developed nations, several factors stand out:

- *Market research.* Solid research is needed to identify markets and study demand for agricultural products in short supply, whether for domestic or export markets. Specialized organizations are often well suited to this task. An example is INCAE's new Centro de Inteligencia Sobre Mercados Sostenibles (CIMS).

- *Technical assistance.* Appropriate integrated technical packages must be designed for products deemed promising (to address the agronomic, environmental, sanitary and phyto-sanitary problems, and quality requirements the farmer may face). This can be accomplished by a variety of partners, both governmental and non-governmental, in partnership with the private sector. Technical assistance could be offered through extension services managed and funded by local authorities, thereby ensuring their active participation.

- *Agricultural safety standards.* The underpinning principles of an agricultural trade program must be built upon scientifically based sanitary (animal and human health) and phytosanitary (plant health) measures. Accordingly, it is essential for any program that supports trade in agricultural products to incorporate the principles set forth in the internationally recognized measures (or regulations) to protect human, animal or plant life or health: notably, the World Trade Organization Agreements on the application of Sanitary and Phytosanitary Measures and the Technical Barriers to Trade. The WTO signatories believe that trading rules based upon science and transparency will promote fair competition and provide predictable and growing access to markets.

- *Marketing and logistics.* To facilitate the efficient commercialization of agricultural products, bottlenecks must be identified and solutions proposed and implemented. One arrangement that has considerable potential for raising incomes of small farmers is contract farming. Processors provide growers with credit and technical assistance, in exchange for delivery of a crop at a fixed price at the time of harvest.

- *Improved access to international markets.* Governments in Central America need to work together to lower and eliminate trade barriers between the respective countries and also with large foreign markets such as the United States, Europe and Japan. There are still important constraints to free trade in agricultural products and/or subsidies (direct or indirect) on certain agricultural products that are a major constraint to diversification.

- *Improved access to labor markets*: labor mobility is important, both within countries and between countries. Seasonal and permanent migration, and the sending of remittances are an important component of the rural economy in the Central American countries. Lower barriers to labor mobility, along with improved access to financial services to transfer remittances are therefore important.

- *Credit support.* Targeted support programs can finance the investments needed to begin production. Some modest scheme may be necessary to support the individual producer's income temporarily during the unproductive phase. However, such support should be minimized and should not unduly distort the necessary market-oriented rationale for diversifying.

- *Community organizations.* Locally based groups can support producer and/or trade organizations. These groups could gradually take over the processes discussed above and provide necessary linkages to markets.

133. Unfortunately, all these forms of support may not be in place or may not fall into place at the same time. The more factors that are present at a given moment, the greater the chances for successful broad-based agricultural diversification. Addressing one factor at a time will not move diversification along as fast as it needs to move to keep up with the dynamic trends and requirements of the domestic and international markets for agricultural products (and non-agricultural and services).

134. Aside from socioeconomic factors, there are cultural factors to be considered as well. It may be difficult to convince coffee producers to produce something else. Generally speaking, producers have a long tradition of coffee production, which may be difficult to overcome. Any diversification strategy must consider this sort of resistance, and other such cultural aspects, when designing programs---especially for areas that cannot produce coffee competitively.

135. Not every farmer can be assisted with a non-coffee agricultural alternative. Other alternatives need to be considered for marginal farmers or those beyond the means of an agricultural solution. Those who face any or all of the following constraints: The slope of the land is too steep, or the soil is too thin and non-fertile. The farm size is too small, or the farm is too remote. There is not enough rain for rain-fed agriculture and no water for irrigation. These producers may need to find employment in light industry associated with non-agricultural activities. All of these activities would require manufacturing in the production area or nearby, offering employment alternatives for displaced growers. Such a manufacturing base requires skilled labor. That labor should be trained, so it is ready to work once the industry is established.

136. Finally, rural development programs will not be equitable or successful if they do not include farm laborers, especially migratory and seasonal workers---perhaps the most neglected and disenfranchised sector in the region. In fact, smallholders, no matter how poor, have more options and support than the landless poor who work seasonally on the farms of others. It is important for the respective countries to consider different types of safety net programs that can provide assistance to poor individuals and households who have difficulty adjusting to the new situation.

137. To conclude, diversification is part of a process of transformation of the rural economy. There have been many lessons learned from the past (see the following box), but each country, region, community, and farmer needs to assess present (and future) conditions and their relative comparative advantage. More attention needs to be devoted to the objectives of a diversification strategy and to assessing the economic, social, and their environmental impacts. Because of the major economic and political changes that have taken place in the Central American countries in the 1990s, there is a need to once again revisit the issue of diversification, to develop some best practices that can be applied on a case-by-case basis.

Lessons Learned from Previous Agricultural Diversification Efforts

1. Improved *quality* of output is no less important than increases in *quantity* of output---and possibly more so.
2. Achieving quality-based competitiveness takes time. This process is greatly aided by partnerships and match-making arrangements with the private sector (including foreign firms). National institutions can offer support to farmers in the form of appropriate technologies, technical assistance, and financial and marketing services.
3. Experience in marketing new agricultural products domestically is often the first step in the successful development of export marketing.
4. Governments can support diversification by facilitating foreign and joint venture investments, as well as transfers of production and processing technologies from abroad.
5. Successful diversification programs that support sustained production and export expansion include new types of financial and marketing arrangements (such as joint ventures, vertical integration, and investment incentive programs). Public investments are also needed in human capital and support structures (education and health, water and sanitation, rural infrastructure, research and extension).
6. Successful diversification programs start by considering the agro-ecological characteristics of the areas to be diversified. Extensive market research and marketing planning of potentially successful crops are also needed before any crops are chosen
7. One of the more successful approaches in diversifying agricultural capacity has been to add value to a crop that is familiar: one that has already been grown in the area and whose agricultural practices and post-harvest handling requirements are known to local producers. Adding value to the product may make it commercially successful, while increasing farmers' incomes.
8. Production, financing, processing, and marketing should be left primarily to the private sector.
9. Farmers cannot assume all risks involved in the new crops. Government should provide incentives should exist for collaborative research/analysis, technical and marketing assistance, and to finance the setting up of production---but not for the production itself
10. The public sector should focus its efforts on providing transportation and communications infrastructure, marketing infrastructure (such as auction/terminal markets and cold storage), standards and quality control services (such as product and factory inspection and certification), market information services, and new product market and trade promotion assistance.
11. Strong institutional capacity within cooperatives is crucial to the success of a diversification program. In general, private agribusiness firms have been more successful than cooperatives diversifying their production. The limited success of "campesino" farmer cooperatives could be attributed to a lack of flexibility, sophistication, and quick response, as well as excessive costs. When working with a perishable product, quick response is needed to correct problems and react to changes in the market. Cooperatives must arrive at consensus before responding to change, whereas individual entrepreneurs might only need to make up their own minds.
12. Diversification initiatives have faced critical and sometimes insurmountable issues of sustainability at the farmer level. Farmer-centered research and extension is important for the adoption of appropriate sustainable farming methods by small farmers.
13. The correct macroeconomic policy environment is crucial for the sustainability of the entire diversification program.
14. Where diversification programs were successful in increasing agricultural exports, they were also successful in attracting foreign investment to the countries' agricultural and food sectors.

See Barghouti, Garbus, Umali (1992); Jaffee (1993); Chemonics (2002).

VIII. THE SOCIAL IMPACT OF THE COFFEE CRISIS

A. Overview of Employment in the Coffee Sector

138. There are many people who derive at least some part of their employment and income from coffee production. According to a recent report by ECLAC[19] (2002) there are over 1.6 million people in rural areas of Central America that derive employment and income from coffee. The traditional focus of attention in the coffee sector during a time of crisis is coffee producers and financial institutions that lend to coffee producers, traders and exporters. Notably the focus has been on coffee producers with outstanding loans that typically are medium and larger producers. However, in the current coffee crisis there has been increased awareness of the widespread negative impacts on small coffee producers and coffee laborers – both full-time and seasonal – and others linked to activities in the coffee sector and to coffee-related incomes and expenditures (e.g., commerce, transportation, storage and processing, financial services, and retail sales).

Typology of Coffee Producers

139. In the five Central American countries there are about 300,000 coffee producers, of which 200,000 are considered "micro producers". Although they account for almost 70% of the producers they produce only 11.6% of the coffee. These micro coffee producers tend to use traditional varieties and technology, family labor, no purchased inputs, obtain low yields, grow other crops - often intercropped with coffee - especially staple food crops, and many work as seasonal (and some as full-time) laborers on larger coffee farms and/or other farms. "Small producers" account for almost 50,000 of the nearly 300,000 coffee producers, and they produce more coffee than the 200,000 "micro producers". Many of the small coffee producers use some improved varieties and technology, use some hired labor and inputs and might have access to credit through a cooperative. They also tend to have other sources of farm based income and possibly some off-farm employment. "Medium producers" tend to be technified, using purchased inputs and hired labor, and many have access to credit. A major proportion of income comes from coffee. Medium-large and large coffee producers account for about 3.5% of the producers and almost 60% of coffee production. These producers account for the majority of purchased inputs and hired labor used in coffee production and harvest. Most have access to formal credit and many are vertically integrated with coffee processing and marketing.

[19] Economic Commission for Latin America and the Caribbean (ECLAC or CEPAL for its Spanish name).

Table 8.1: Typology of Producers in Central America

	Micro	Small	Medium	Medium-Large	Large	Total
Farm Size	< 3.5 ha	3.5-13ha	14-34 ha	35-70 ha	> 70 ha	---
# of Producers	200,000	47,900	33,000	7,300	2,900	291,000
Total Land	162,000ha	170,000ha	126,000ha	133,000ha	301,000ha	892,000ha
Average Yield (qq/ha)	11.7	14.1	20.6	26.0	19.8	18.3
% of Producers	68.7%	16.4%	11.3%	2.5%	1.0%	100%
% of Land	18.2%	19.1%	14.1%	14.9%	33.7%	100%
% of Yield	11.6%	14.7%	15.9%	21.3%	36.5%	100%

Note: Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua.
Source: ECLAC (2002, p.29), based on estimates from respective countries' national coffee associations

Coffee Laborers

140. It is estimated that there are more than 8 times as many coffee laborers as producers. Some are "full-time" employees living on or near coffee farms, and many more are seasonal laborers – especially during harvest season. Many "micro producers" also seek employment with larger coffee producers. A significant proportion of seasonal laborers during harvest migrate to coffee producing areas from other areas. These seasonal migrants might have their own small landholdings where they produce food staples and might also seek other sources of seasonal employment in agriculture or other sectors.

141. As can be observed in the following table, about 28% of the economically active rural labor force in the Central American countries derive some employment and income from coffee production and harvesting. In Nicaragua 42% and in Guatemala 31% of the rural labor force works in coffee. Interestingly, in Costa Rica, where coffee is least important in terms of share of GDP and exports, a high proportion of the rural labor force (28%) is involved in coffee.

142. As can be observed in the table, daily wages range from US2.3/day in Nicaragua, US3.0-3.6/day in Honduras, Guatemala and El Salvador, and US$7.6/day in Costa Rica. Although there are official minimum wage laws in the countries, there are numerous reports of wages for coffee laborers being lower than the minimum rate. There is also

evidence that many individuals and households that are seasonal coffee laborers are classified as "poor".

Table 8.2: Estimated Employment in Coffee Production in Central America

Country	Economically Active Labor Force in Rural Areas	Labor Force Employed in Coffee (full-time and seasonal labor)	% Rural Labor Employed in Coffee	Average Wage per Labor Day (US$/day)
Costa Rica	725,000	200,000	28%	$7.6
El Salvador	936,000	160,000	17%	3.6
Guatemala	2,286,000	700,000	31%	3.2
Honduras	1,152,000	300,000	26%	3.0
Nicaragua	672,000	280,000	42%	2.3
TOTAL Central America	5,771,000	1,640,000	28%	---

Source: ECLAC (2002, p.21)

B. Impacts of the Coffee Crisis in Central America

143. It is somewhat difficult to isolate the socio-economic impacts of the coffee crisis on the Central America countries because there has been a series of negative shocks that have overlapped and exacerbated each other. These shocks include Hurricane Mitch, which caused widespread destruction in 1998, erratic rainfall and persistent drought over the past few years, and the decline in international commodity prices for major export crops (e.g., coffee, bananas, oil palm and citrus). In addition, there was a serious earthquake in El Salvador in January-February 2001, and tropical storm Michelle affected Honduras and Nicaragua in the fall of 2001. Thus, the drastic fall in coffee prices since 1990 is only one of many negative forces sweeping rural areas, and occurring at a time when many poor rural households are extremely vulnerable to additional shocks – because their assets bases and risk management capacities have been reduced. As such, the current coffee crisis is really part of the broader rural poverty crisis in these countries.

From InterAction on the Central American Crisis – Updated April 2002

"Much of Central America is suffering from a worsening food crisis precipitated by a combination of droughts, floods, and poverty linked to falling world coffee prices. Since last summer, very little rain fell across much of the region, causing widespread crop losses in Guatemala, Honduras, El Salvador and Nicaragua. The persistent drought has been described as the worst disaster to hit Central America since Hurricane Mitch, and comes on the heels of two devastating earthquakes that struck El Salvador in January and February 2001 and tropical storm Michelle, which battered Honduras and Nicaragua in the fall of 2001. The drought has caused agricultural losses of up to 80 percent in parts of Guatemala and El Salvador, in Guatemala alone, an estimated 150,000 people, including nearly 60,000 children under the age of five, are suffering from acute malnutrition. Severe drought in the eastern part of El Salvador has affected over 300,000 people, and over 100,000 more are affected in Nicaragua. A further 300,000 people are experiencing food insecurity in Honduras, which has lost over 50,000 hectares of agricultural land to tropical storm Michelle last fall. Across the region, nearly a million people are now facing food security problems."
See www.interaction.org/centralamerica

144. Recent USAID appraisals of the situation in the respective countries highlight widespread reductions in employment – "Many hundreds of thousands of seasonal and permanent coffee farm jobs, are being lost". Poor rural households' have lost employment and income because there is lower demand for coffee laborers, a smaller harvest to pick, and lower wages. The decreases in employment and incomes have resulted increased food insecurity and malnutrition, some abandonment of farms, and increased migration out of rural areas – both domestic or cross-border. To make matters worse, USAID concludes that the coffee crisis is reducing government revenues, weakening national financial systems, and contributing to overall social and economic instability. That is, the coffee crisis is creating a situation whereby there is a lack of domestic resources available to mitigate the crisis and its socio-economic impacts, and the crisis deepens.

Survey Results from El Salvador and Nicaragua

Surveys were recently conducted by the World Bank's Commodity Risk Management Group (RDVCG) in Nicaragua and El Salvador to assess producers' responses to low coffee prices and their perceptions of price risk and other risks (see World Bank 2001, 2002). Results indicate that the immediate responses by producers has been to reduce costs, particularly of purchased inputs and labor. Producers also seem to be harvesting their coffee, but cutting back on the number of pickings, harvesting both ripe and unripe cherries. Results also indicate some other risk coping strategies to reduce expenditures. Many producer households are reducing their consumption. Smaller producers, in particular, indicated that they are increasing informal borrowing and are concerned about losses of other employment. Almost all producers, regardless of size, ranked coffee price shifts as the most important risk they faced (e.g., as compared to nature and health related risks).

145. The recent report by ECLAC (2002) notes that the coffee crisis has had a significant and widespread impact on the economies of Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua. Not only are coffee producers and laborers directly affected, but linked economic activities in commerce, transportation, storage and processing, financial services, and retail sales have all been impacted through a negative multiplier effect.

146. However, according to the ECLAC report, the most serious impacts have been on coffee producers and laborers and concentrated in rural areas. The financial situation of coffee producers in Central America has suffered considerably, as have financial institutions that provided loans. Loan arrears and defaults are increasing and access to new loans is limited. This has resulted in a financial crisis for many producers and financial institutions. To reduce costs and cut their losses, many producers have cut back or eliminated many cultural practices (e.g., weeding and pruning, fertilizer applications, treatments against pests and diseases), decreased the number of harvest pickings. In addition many producers are cutting back on wages and/or paying wages in-kind. Some farms have been abandoned or neglected. Reduced production activities has lowered expenses on purchased inputs and labor and led, in many cases to lower yields and/or

lower quality coffee. Especially when cutting back on harvest pickings. All of these cost saving practices translate into a lower demand for labor – both full-time and seasonal. In most cases the lower demand for labor has led to excesses in the supply of labor and downward pressure on prices. There are, however, reports that in some coffee producing areas there is actually a lack of harvest labor because laborers have sought alternative employment opportunities in expectation of lower wages and labor days.

147. According to the ECLAC study (see table 8.3), it was estimated that compared to the 3 previous years, in 2001, labor demand was about 30% less in Guatemala, Honduras and Nicaragua, about 20% less in El Salvador and about 12% less in Costa Rica. In total, for the five countries, this translated into a loss of about 42 million labor days, or 170,010 full time equivalent jobs (based on 250 labor days)[20], and a loss of income of almost US$140 million.

Table 8.3: Estimates of Losses of Employment and Wages in Coffee Production by Country for 2001

Country	(a) Average # of Labor Days per ha (based on 3 previous years)	(b) Reduction in # of Labor Days/ha	(c) = b/a % Reduction in Labor Days per ha	(d) Total Reduction in Labor Days	(e) Reduction in Full Time Employment Units (250 labor days = 1 FTE)	(f) Daily Wages per Labor Day in US$	(g) = d*f Total Reduction in Labor Income in millions of US$
Costa Rica	128.7	15.6	12%	1,675,000	6,700	7.8	12.7
El Salvador	141.4	28.4	20%	4,540,000	18,155	3.8	16.3
Guatemala	221.0	71	32%	19,380,000	77,530	3.2	62.0
Honduras	163.0	50	31%	12,250,000	49,000	3.0	36.7
Nicaragua	147.0	43	29%	4,660,000	18,625	2.3	10.7
TOTAL	--	--	--	42,505,000	170,010	--	138.6

Source: ECLAC (2002, p.31)

148. However, these estimates of lost income do not necessarily translate into "actual" declines in household income and consumption. That is because the coffee laborers are active trying to adopt risk coping strategies and there has also been some safety nets provided by governments, donors and NGOs. In fact, the actual income and consumption impacts on households of coffee laborers and producers has not been researched in depth, and such an analysis is a major upcoming priority for the World Bank. Proposals for such research using existing household surveys are currently being prepared at the World

[20] In reality, many of the laborers are seasonal and only a small proportion are "full-time. So, it is clear that many more than 170,010 income earners were negatively impacted.

Bank. In addition IDB is considering complementary rapid appraisals to improve the understanding of the impact of the crisis on coffee households.

149. Despite the lack of in-depth analyses of the impacts of the coffee crisis on the poor, there has been substantial anecdotal evidence that many poor rural households that derive some income and employment from coffee are, in fact, suffering.

C. Safety Nets - The Institutional Response

150. As mentioned earlier, when governments have attempted to respond to a "coffee crisis," they have focused attention on coffee producers: notably those with outstanding loans, which are typically medium and large coffee producers. Sometimes, small producers have also benefited from government assistance. An example is a current program in Mexico to compensate small coffee producers for low prices. This program provides special support to the income of coffee producers with areas for coffee under 5 ha (according the 1992 coffee census) and for up to 750 pesos per ha (about US$75/ha).[21]

151. Coffee laborers have not tended to benefit from direct government assistance. Large proportions of coffee laborers are classified as "poor" by various poverty assessments. Indeed, coffee laborers tend to be overlooked. This is important because, in times of economic crises, medium and large coffee producers tend to cut back on their use of purchased inputs and labor. With less demand for labor, wages tend to fall. This can have serious negative impacts on poor coffee laborers, a large proportion of who are also small producers.

152. Since many small coffee producers and laborers also cultivate staple foods for home consumption, any concurrent weather-related risks, such as drought, can exacerbate the negative welfare impacts of low coffee prices. This is currently the case in many Central American countries, where yield losses from drought are compounding the downside shock on small coffee producers and laborers.

153. Moreover, others in the rural economy---including coffee input suppliers, processors, and providers of household goods and services---are also impacted by low coffee prices and low coffee-related incomes. Like coffee laborers, they also do not tend to benefit from any direct government assistance in time of crisis.

154. Recognizing the existence of a rural poverty crisis is an important first step in suggesting possible social protection strategies and options. Institutional responses to address the social problems stemming from the coffee crisis could include:

- *Providing targeted and self-targeted emergency assistance to the rural poor.* The poverty crisis from low coffee prices has led to increased food insecurity and incidences of malnutrition. USAID has been responding to the crisis by mobilizing various emergency food aid programs and using NGOs to administer them. This rapid response has been credited with staving off a major disaster.

[21] See Diario Official, Wednesday 31 January 2001.

There is a need to improve early warning systems of crises and mechanisms for providing emergency relief with cooperation of the respective Governments (national and local), along with donors and NGOs.

- *Providing assistance to unemployed coffee workers and their families.* Nicaragua offers an example. A work-for-food program has been recently set up in partnership with coffee producers. Participants are employed on private coffee farms and receive partial payment from owners; food allotments to make up the difference. The reduced wages allows coffee producers to employ more laborers than they could have otherwise in this crisis situation. This program aims to help both coffee laborers and larger producers. In Mexico, a temporary employment program (PET)[22] and a natural disaster fund (FONDEN) provide coverage to rural people when external shocks occur, mainly related to natural calamities (droughts, floods, earthquakes, etc).

- *Improving safety net programs.* There is a need for safety net programs for coffee laborers, small producers, and others in the rural economy: both targeted and self-targeted programs. These programs could include food aid, food-for-work, and temporary employment. They should also include assistance for families and children. Social funds could also possibly be mobilized. Such programs will require a case-by-case analysis in different countries and regions, and where possible should be mainstreamed into existing safety net programs for the rural poor. A key issue in the design of safety nets will be the fact that many coffee laborers are seasonal migrants. This can make geographic targeting difficult.

- *Assisting coffee laborers and small producers in skills development and training* to improve their mobility, either within or beyond the coffee sector. The high supply of unskilled rural labor puts downward pressure on wages; skills development can offset this. Moreover, laborers will probably need new skills as part of the process of diversification.

- *Promoting the use of price risk management instruments.* To provide unemployment insurance to laborers and/or to fund alternative employment, medium and large producers could be given incentives to use instruments such as commodity price insurance (see also earlier section on managing price risks). Possibilities could also be explored for governments to use price risk management instruments to help fund safety net programs for coffee laborers and others. However, if prices remain low for a period of years, commodity price risk management instruments will have a very limited use in funding safety programs. These instruments are better suited for temporary shocks rather than persistent ones.

[22] PET is a standing rural poverty program that can be scaled up in times of economic crisis or natural disasters.

- *Providing assistance to link the laborers' associations with the producers' associations* to help identify common issues and capabilities to respond better to crises.

IX. ENVIRONMENTAL CONSIDERATIONS

155. The environmental dimensions of coffee production and post-harvest processing are very complex. Technology choices and other decisions by coffee producers impact on-farm environmental quality, and these choices and decisions also can have important regional and global environmental impacts. Links between agricultural activities and environmental quality (i.e., environmental externalities) are not unique to coffee. However, environmental dimensions of coffee production and post-harvest processing are striking because they are often located in sensitive environmental areas that influence the overall health of large ecosystems including biodiversity, soil and water erosion, temperature and rainfall patterns, water flows and quality in watersheds, carbon sequestering, etc. (Halweil, 2002; Fleischer, 2002).[23]

156. Mesoamerica, which includes all of Central America (Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua along with Belize, Panama, and parts of southern Mexico) has been named as one of the world's biodiversity hotspots – an area of very high biodiversity that is under severe threat (Pagiola and Ruthenberg, forthcoming). And many coffee growing areas are particularly fragile ecosystems since they are located at high altitudes and on mountain slopes.

157. Coffee is a major component of overall forested and protected areas in the Central America countries. In El Salvador, the coffee area is more than 10 times as large as the entire system of protected areas. The potential role of biodiversity-friendly coffee becomes all the more important when location is taken into account. Many coffee areas are located close to protected areas, thus expanding their area and connecting them to each other. Thus biodiversity-friendly coffee could extend protected areas by a non-negligible proportion. This role is particularly important in countries such as El Salvador, where protected areas are small and isolated.

Table 9.1: Coffee and protected areas in Central America (in square kilometers)

	Total Area	*Forest Area*	*Protected area*	*Coffee*	*Cocoa*
Costa Rica	51,100	12,480	7,006	1,000	200
El Salvador	21,040	1,050	102	1,650	4
Guatemala	108,890	38,410	18,277	2,600	45
Honduras	112,090	41,150	11,120	2,490	58
Nicaragua	130,000	55,600	9,638	941	13
Sources: World Bank, 2001					

A. Coffee Economics and Environmental Issues

158. Two important points need to be emphasized when discussing the environmental dimensions of coffee production and post-harvest processing:

[23] The recent RDV Agricultural Technology Note by Gerd Fleischer (and the background papers prepared for the Note) provides an review of the literature on environmental dimensions of coffee.

a) Environmental issues in coffee production and post-harvest processing are important to all levels of technification, from small producers using low-input traditional production and processing methods and to larger producers employing substantial amounts of inputs to achieve high yields, and for large post-harvest processing facilities. Thus, it is not possible to generalize that small producers are "good stewards" and large producers "bad stewards" of the environment. All coffee producers can have positive and/or negative impacts on the environment depending on their initial agro-ecological conditions and their technological choices and other decisions.

b) Both low and high prices have affected technology choices and other decisions by coffee producers in Central America in recent years, and thereby had potential for generating negative environmental impacts. Thus, either low or high coffee prices can have a negative environmental impacts. This is an important point, since the focus is now on the negative environmental impact of low coffee prices. Therefore, it is important to consider ways to encourage sustainable environmental practices irregardless of coffee price levels.

159. Coffee can be grown under conditions which functionally resemble a natural forest and can thereby provide many of the environmental benefits of a natural forest.[24] The traditional way of producing coffee in Central America, using naturally growing trees as shade and also inter-planting food staples and other perennial or annual crops, not only conserves soil and water like a forest, but also supports a variety of plants and animals and serves as a natural moderator of the microclimate. In addition, with traditional methods of producing coffee, farmers have a natural means to diversify incomes and even help manage coffee price and yield (e.g., weather related, pests and diseases) risks since additional income and/or home consumption could be derived from the wood, food, medicinal plants, etc. Also, the traditional methods were effective means of generating organic fertilizer and providing natural protection against most diseases and pests. In fact, according to Halweil (2002): "Coffee, if grown right, can be one of the rare human industries that actually restore the Earth's health."

FROM COFFEE RAINFOREST TO COFFEE PLANTATION

According to Halweil (2002, p.37-38): " Until a few decades ago, most of the world's coffee was grown in the understory of rainforests, with farmers looking after the rainforest trees as a natural part of growing coffee. But, more and more coffee is being produced in what was rainforest – clear-cut tracts of land without shade, that give off the dry burning scent of ammonia fertilizer. Over 40 percent of the coffee area in Colombia, Mexico, Central America, and the Caribbean has been converted to "sun" coffee, with an additional one-quarter of the area in conversion."

160. In Central America, shade-grown coffee - in contrast, coffee grown without shade ('sun' or 'technified' coffee) - provides the greatest opportunity for environmentally-

[24] Because of the high altitudes and high rainfall areas much of the coffee in Central America is grown, conditions often functionally resemble a natural rainforest.

friendly production, particularly in the more traditional (so-called 'rustic') coffee production with canopies from diverse native tree species. A significant proportion of Mesoamerica's coffee production is shade-grown. Large areas also meet the basic criteria for organic production – essentially by default, due to farmers' inability to afford modern inputs.

Organic Coffee – What is "Organic" About It?

Demand for organic coffee, although driven primarily by consumer perceptions of health risks associated with agrochemical residues, also tends to have environmentally benign effects. There is considerable overlap between shade-grown and organic coffee production, in that sun coffee is almost never organic, while shade-grown coffee usually is. As discussed below, however, the formal requirements for 'organic' certification go well beyond the absence of agrichemical use, often making it difficult for producers to qualify. Broadly, organic certification requires limited or no use of agrochemicals and measures to preserve soil fertility. If in addition to organic, producers wish a fair trade certification, this requires buyers to develop long-term relationships with producers, guarantee them minimum prices, and provide them with credit. Together, organic, fair-trade, and shade-grown coffees are sometimes referred to as 'sustainable' coffees (Giovannucci, 2001).

161. Throughout Central America, shade-grown coffee production has been under pressure. Conversion to higher-yielding sun coffee varieties was heavily promoted beginning in the 1970s, to increase farmer returns and reduce the risk of coffee rust, a fungal disease. Relatively high coffee prices in the 1980s and 1990s also encouraged the conversion of some shade grown coffee to intermediate technologies and technified coffee with less shade and increased use of agrochemicals in order to increase productivity of land planted to coffee.[25] The introduction of higher yielding coffee varieties at higher tree/land area densities and the increased use of agrochemicals has, in some cases, led traditional coffee producers to cut down shade trees and abandon the biodiversity and inter-planted crops. In addition, there was an expansion of coffee production in areas with natural forest cover. On the other hand, low coffee prices in recent years have encouraged some coffee producers to shift out of coffee production by cutting down both coffee and shade trees and even encouraging deforestation of adjacent forests in an attempt to increase income sources (Pagiola and Ruthenberg, forthcoming).[26] In table 9.2, approximate allocation of coffee area to different levels of technology in the early 1990s, by country, is presented.

[25] In many cases, public support services such as technical assistance and extension programs, and credit programs were providing incentives to producers to shift to higher technology levels.

[26] Recent decades have seen coffee production shifting either to shade-less 'sun' coffee or to annual crops or pasture, all of which provide substantially lower environmental benefits than shade-grown coffee.

Table 9.2: Coffee Area (in thousands of hectares) and Level of Technology

	Technology Level						
Country	Traditional Area Planted	Intermediate Area Planted	"Technified" Area Planted	Total Coffee Area	Percent Traditional	Percent Intermediate Technology	Percent "Technified"
Costa Rica	11	54	43	108	10%	50%	40%
El Salvador	152	0	13	165	92%	0%	8%
Guatemala	110	86	49	245	45%	35%	20%
Honduras	30	100	70	200	15%	50%	35%
Nicaragua	53	14	27	94	56%	14%	29%
TOTAL	356	254	202	812	44%	31%	25%

Source: Rice and Ward (1996)
Notes: Data for 1993, except Nicaragua data for 1984.

162. Using data from the early 1990s, it can be observed in table 9.2, that about 25% of the total coffee area in the Central American countries was produced using technified methods compared to 44% using traditional and 31% using intermediate technologies. However, there are considerable differences in levels of technology practiced in the different countries. For example, in Costa Rica about 40% was technified and about 50% intermediate and only 10% traditional technologies. At the other extreme, in El Salvador about 92% of coffee area was traditional. It is important to recall that, as pointed out previously, because of the tendency toward low coffee productivity per land area using traditional technologies compared to higher technology levels, the share of actual coffee production using the various technologies is skewed in favor of the more technified methods. Thus, although almost 1/2 of coffee land area might be devoted to traditional technologies, it is possible that this accounts for less than ¼ of coffee production.

163. Site-specific environmental conditions, including soil and microclimate, determine whether the use of the new technologies of coffee varieties and agrochemicals is appropriate. In cases where the adoption of new varieties and agrochemicals were introduced as a "package," without due regard for environmental sustainability, increased production was achieved. Unfortunately, however, the decision to "technify" production has sometimes been a "lose-lose" proposition; new varieties and increased use of agrochemicals have not resulted in higher yields. The implementation of the new technologies has altered the natural ecosystem, forcing coffee producers to continually increase the amount of agrochemicals they use. These practices have not only been damaging to the environment, but have also undermined the competitiveness of the coffee enterprises themselves.

Farmers' Decisions and Environmental Quality: Are Externalities Internal or External?

"Decisions on whether to maintain land under shade-grown coffee are made by the farmers involved, in light of their own preferences and constraints. They do not generally consciously decide to damage biodiversity, because most of these benefits do not accrue to them. Farmers deciding whether to maintain shade-grown coffee or convert it to sun-coffee or to other crops will consider the benefits from increased crop production resulting from the switch, and will consider the cost of making the switch, but they will not consider the loss of biodiversity benefits, not the loss of other benefits such as watershed protection The reason is simple: whereas farmers receive payment (or consume directly) the crops they grow, they receive no compensation for the ecological services that biodiversity provides. These benefits, therefore, simply do not enter into their decisionmaking (Pagiola and Ruthenberg, forthcoming)."

However, this argument means that there should be some convergence between farmer's decisions and protecting the environment IF the right economic incentives exist. For example, there is some evidence that coffee produced under shade-grown conditions is of better quality and therefore might be able to command a price premium. Also, there is evidence that under certain conditions using organic production practices and inter-planting can provide net income flows per land area comparable to technified systems of production. In addition, if it is possible for producers to receive premium payments for protecting biodiversity (e.g., "bird friendly coffee"). In fact, as is mentioned throughout this report, one of the major challenges is how to internalize the environmental externalities associated with coffee. See Giovannucci, Brandriss, Brenes, Ruthenberg, and Agostini (2002).

B. General Environmental Considerations in Coffee Production

164. The main environmental considerations of coffee production, from cherry to roasted coffee, are the management of the coffee plantation, preservation of biodiversity, soil and water conservation, agrochemical use, and the consumption of water in the post-harvest processing. The most prominent environmental problems are related to these issues and are related to lack of environmental awareness and sustainability.

165. *Farm management and land use.* No matter the method used for coffee production, good management of the plantation is key, including:

- Appropriate use of agrochemicals for pests control (pesticides) and yield improvement (fertilizer);
- Maintaining not only the coffee plants, but the shade trees, and, using adequate types and densities;
- Conserving soil and water through erosion control with contour planting and appropriate ground cover;
- Managing waste on plantations, including recycling of residues (pulp, water).

166. However, many small coffee producers have other priorities and pursue other activities. Accordingly, the effort seems to be focused on the harvest, more or less leaving the plantations to themselves the rest of the year.

167. *Biodiversity.* Traditional coffee plantations used to have levels of biodiversity similar to natural forests. As the amount of agrochemicals has increased with the "technification" of the coffee production, the natural levels of biodiversity have slowly disappeared. Preservation of biodiversity is a fundamental part of sustainability, as

coverage provides shelter to animals and maintains the balance of pests and diseases found naturally in the ecosystem. The intensified coffee production, on the other hand, sees any crop apart from coffee as a potential competitor. In some cases, coffee is produced in areas better suited for other crops/forests, with negative consequences for biodiversity and the ecosystem.

168. *Soil and water conservation.* "Technified" coffee production with intensive use of agrochemicals leaves the soil in a state of ecological imbalance, lacking the capability to recycle the necessary nutrients and hampering the ability of the soil to contain water. Furthermore, the risk of erosion increases without sufficient groundcover to hold soil and help water infiltrate to the aquifer and keep the soil moist. Given the fact that coffee is often cultivated on slopes, there is an even higher risk of losing the top fertile layer of humus, which is essential for the quality of the coffee.

169. *Use of water.* Wet milling coffee requires large amounts of water (200-500 liters to produce 46 kg of green beans). The process is the same whether it takes place in big mills or by individual coffee farmers. Given the large amounts of water used, mills tend to be situated near a river (and in some cases in the river). Water used in the milling process is highly contaminating, containing sugar from the pulp and residuals from the fermentation. Discharging the water directly in the stream or river not only pollutes the water, destroying aquatic flora and fauna as well as the surroundings, but also contaminates the drinking water for communities downstream. During the peak of the harvest, the individual farmer re-uses water to speed up the fermentation process of the next lot. However, recycling fermentation water can affect the quality of the coffee.

C. Environmental Aspects of Strategies to Ameliorate the Coffee Crisis

170. In deciding whether to pursue a strategy of increased competitiveness in coffee production or diversification out of coffee, producers make an indirect choice regarding the impact in the environment. It is difficult to determine the precise environmental impacts of each strategy, whether positive or negative. Some potential linkages between increased competitiveness, diversification and the environment are discussed below.

171. For land that does not lend itself to any other agricultural pursuit and for important watersheds and forests, payments for environmental services may be a viable alternative livelihood, or at least a potential supplemental revenue stream from sound land use. Land can be set aside for forest preservation, for water and carbon sequestration, for public parks, or for other environmentally beneficial uses.

172. Although a lot of attention from the World Bank and other development institutions might be focused on smaller coffee producers, it is important to include medium and large size producers in sustainable coffee programs. The participation of medium and large coffee producers is essential to any environmentally oriented coffee strategy and broad-based rural development plan. Many of these larger producers have important marketing contacts, skills, and experience and might even be better situated to adopt alternative technologies. Small, neighboring producers might be able to ride their

coattails into premium coffee markets. And, these larger producers are major employers of coffee laborers.

Environmental Impacts of an Increased Competitiveness Strategy

- *Biodiversity.* Aiming toward specialty coffees entails managing the shade forest and taking a proactive approach to improve biodiversity and the ecosystem, as well as soil and water conservation. Apart from benefiting the environment, the strategy can yield economic benefits to the producer if it opens access to markets selling environmentally friendly products, at premium prices.
- *Implementation of cleaner technology.* Water-saving and recycling measures implemented in both large and individual mills can indirectly be linked to quality management.
- *Farm management.* Good management procedures include erosion control, the sound use of agrochemicals, and shade and waste management, along with the use of resistant varieties, harvesting of ripe cherries, and proper preparation and cleaning of the plantation after the harvest. A well-managed plantation from the environmental perspective has direct positive linkages with quality: for example, through the prevention of defects and uniformity of the harvested cherries.
- *Organic coffee.* Organic coffee production involves several activities with positive impacts on the environment. Decreasing the use of agrochemicals and focusing on shade management increases the level of biodiversity. Moreover, it increases the environmental awareness of the consumer.
- *Knowledge and information.* Improvement of coffee quality requires knowledge and information. This can be provided through technical assistance to the small coffee producer in remote areas, and could be offered through NGOs and other scientific institutions conducting research in coffee production.

Environmental Impacts of a Diversification Strategy

- *Biodiversity.* The biggest negative impact of diversification into other crops or non-agricultural activities includes the possibility of destroying the existing shade forest. The clearing of land to develop non-agricultural activities will have a negative effect on the ecosystem, biodiversity, and soil and water conservation, if the necessary measures are not taken. An environmental impact assessment in every case can assure that only activities with *no* negative environmental impacts will be implemented.
- *Agroecological conditions.* Crops intermixed with coffee and/or new crops might not be adequate for agroecological conditions, potentially causing negative environmental impacts.
- *Technical assistance.* Access to technical assistance is the key element to make a qualified decision as to introduce new crops or other non-agricultural activities. This is especially true when diversifying into crops that are less known by the farmers.

D. The Experience in Latin America with Shade-grown coffee[27]

173. The World Bank and the Global Environment Facility (GEF) have both been interested in shade-grown coffee because of its potential to simultaneously address local development issues and broader environmental issues. Two projects in the Latin America Region[28] have been financed by GEF/WB through their medium-sized grant window to promote shade-coffee as part of a biodiversity conservation strategy. The *Promotion of Biodiversity Conservation within Coffee Landscapes Project* in El Salvador, and the *El Triunfo Biosphere Reserve: Habitat Enhancement in Productive Landscapes Project* in Chiapas, Mexico. These two projects have very similar objectives but use different approaches and are being implemented in different contexts, providing a valuable opportunity to see the mechanism at work. The El Salvador project has closed recently and the Chiapas project is in its final year of implementation.
Results and lessons learned of these two projects include:

174. ***Biodiversity conservation, coffee production and poverty reduction can be combined***[29]. The Chiapas project has demonstrated that innovation and a sustainable market mechanism allows poor communities to substantially improve their livelihood through increased incomes from growing coffee while protecting biodiversity of global value. The approach of the project was built on the three pillars of sustainable development:

- Economic sustainability as local growers and their communities are now earning more than ever before (about 20% income increase) by growing and marketing coffee that is biodiversity friendly.
- Environmental sustainability as instead of cutting down the trees for expanding production, the incentives for the small farmer now is to protect the trees because it is the key factor to their increased income.
- Social sustainability as local communities are now much better organized and their organizations better run through improved capacity for applying participatory techniques and tools for community natural resources and development plans, plan implementation and plan evaluation.

175. The result is that a small project with a small budget has changed a threatening dynamic of deforestation and sustained poverty. It has been shown that in a highly marginalized, poor, remote but biodiversity rich area small farmers have improved their livelihood in a tangible manner while contributing to protecting the local, regional and global environment. It is for these results that the project has been selected for a feature in the World Development Report 2003.

176. ***Attention to markets and commercialization is key when promoting the concept of shade coffee.*** Both projects had to be 'retrofitted' after project start to better incorporate

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[27] Drafted by Ina-Marlene Ruthenberg

[28] A project each in Uganda and in Nicaragua included work on some aspects of sustainable coffee production in the context of larger projects, with objectives that are broader.

[29] The El Triunfo Project in Chiapas, Mexico is featured in the World Development Report 2003 for successfully combining economic, environmental and social sustainability. The following information has been drawn form a background note prepared for the WDR. For more information on the project, please visit the website: *http://wbln0018.worldbank.org/me_eltriunfo/me_eltriunfooar nsf*

these aspects and to strengthen producer organization's capacity to assess and access markets. Simple and rather modest marketing study were envisaged in the initial project design of both projects but in a situation where a market for a product is not yet developed and subsequently no market data existed this approach turned out to be insufficient. One year into project implementation, the Chiapas project shifted project resources to focus on aspects of commercialization and institutional strengthening of producer organizations in order for them to access and test an emerging market for environmentally friendly coffee. The deal brokered by Conservation International and Starbucks certainly gave a boost to the feasibility of selling their coffee but the challenge has been for them to sustain the relationship with Starbucks and to diversify their sales to other companies in order to avoid dependency on one. However, to deliver consistently high quality coffee in a timely manner to demanding international operators requires business know-how and managerial competence by the peasant producer organizations. Three years later it is clear that part of the economic benefit that the coffee farmers under the Chiapas project were able to realize comes from selling directly to coffee roasters in the importing country that acknowledge the high quality produced by them. Therefore, the project demonstrates that it is possible to build this capacity but it is a process and takes focused and tailored support.

177. ***Does the market provide a premium for biodiversity friendly grown coffee?*** The two GEF/WB financed projects in the Meso-American Corridor promoted shade-coffee under the hypothesis to be able to harness consumers' willingness to pay for conservation by inducing them to pay a premium for biodiversity-friendly shade-grown coffee. The belief that consumers would be willing to pay a premium for biodiversity-friendly coffee is based on the rapid growth of the specialty and gourmet coffee market and on the success of other 'cause-related' or 'story' coffees, including organic and fair trade coffee (Rice and McLean, 1999). Sales of specialty coffees reached over US$5 billion in 2000 in the USA alone, and are expected to continue to grow at rates of 5-10 percent annually (Giovannucci, 2001). There are clear signs that trying to capture this consumer willingness to pay for biodiversity conservation can be a successful route. The coffee from the Chiapas project has been sold successfully and repeatedly with a premium. However, that premium principally stemmed from the coffee being certified organic. The sales have yet to see an additional premium for being certified as shade-grown, which is a process that is still developing. The El Salvador project is more advanced with the number of farms certified as 'shade-grown', but sales have been more limited as the market was not paying as high a premium. Contrary to the Chiapas 'shade certification', the El Salvador certification does not incorporate organic as a principle and allows for limited and well-specified use of agro-chemicals. An approach that under biodiversity considerations is not problematic but currently has much less market demand.

178. Biodiversity-friendly certification has many faces. Although a set of criteria for shade-coffee does exist[30] – many actors, many concepts and diverse local situations make it difficult to apply the criteria in each microclimate. El Salvador with the rainforest alliance's EKO-OK label promotes Integrated Pest Management that allows the limited application of some synthetic agrochemicals. This approach was chosen for El Salvador

[30] Smithsonian Migratory Birds Center criteria for shade-grown coffee.

as most participating coffee farmers were mid-sized and were already applying some chemicals and a conversion to organic would have been a long process. In Chiapas the setting was very different. The project region is remote and the small farmers are highly marginalized and very poor. Agricultural services and technical assistance has not reached them and they produced their coffee without any chemicals and fertilizers. However, a trend emerged among these farmers to copy the 'technified' production system of some of the larger coffee farms in the area in order to increase yields. The project instead built on the organic coffee movement in Chiapas, supported among others by a well-established strong cooperative buttressed by the Catholic church.

179. This decision was taken primarily in light of the market's recognition of organic premiums. It has allowed three of the seven producer groups under the project to pocket a premium as close as 100% from most of their harvest in 2001 though about 40% has been more typical. Mexico's approach of a 'super-seal' developed under the El Triunfo project in Chiapas combines elements of three types of certification – organic, fair trade and biodiversity-friendly. The 'super-seal' approach to certification is developing into the first such national criteria as the Government of Mexico's Coffee Council endorses and promotes it.

180. ***Quality, quality, quality***. Neither organic or fair trade certification nor the best environmental story will sell coffee with a premium if the quality is not good. The is a hard lesson learned by coffee producers in both projects and well-intentioned conservationists. Thus, timely, good and continued technical assistance for high quality production and processing is an important element for promoting 'shade-coffee' production if farmers want to sell their coffee with a premium in the marketplace.

181. ***Civil society participation and partnerships build a supportive momentum necessary to promote and mainstream the concept of shade coffee.*** The El Salvador project successfully build a broad understanding of biodiversity friendly coffee in the country by reaching out to civil society and by strengthening the government's coffee policy to integrate aspects of shade coffee . Furthermore, the country has identified shade grown coffee as a national patrimony with the creation of a 'Parque Nacional de Café'. The Chiapas project has also invested heavily in partnerships by initiating an 'El Triunfo Roundtable' bringing together government agencies, academic institutions, and local and international NGOs. Sharing information and concepts has resulted in improved coordination and new areas of collaboration, e.g. in access to credits and technical assistance. The National Coffee Association and the Ministry of Agriculture (SAGARPA) of Mexico both have expressed their interest in promoting the concept of shade coffee based on the work in Chiapas and are reviewing the possibility to integrate elements of the concept into the government's national coffee production support schemes.

X. INSTITUTIONAL AND TRADE POLICY ISSUES

182. Since the 1990s, the global coffee sector has undergone important structural changes. These changes will shape the course of the industry during the next decade and beyond. To support the industry in the future, coffee institutions in Central America need to revise their role and strategies and help identify new opportunities.

183. From ministries and national coffee institutes and councils to private associations, research and extension institutes, to NGOs and regional entities, many institutions and organizations operate in the coffee sector in Central America. Private sector groups also play an important role in such areas as exporting, processing, banking, technology transfer, and market information.

184. Clear differences in the scope and strength of institutions exist in Central America. Some countries have strong institutional capacity with clear strategies and well-defined technical, social, and economic programs; others have public institutions with well-defined roles but weak institutional capacity. Institutions in some countries have begun to streamline their processes and develop a market and service orientation. Nevertheless, in some cases outdated regulations impose excessive transaction costs. In many countries, fragmented producer associations contrast with strong milling and exporter associations. Most countries suffer from an absence of cohesive national coffee policies and strategies to guide and regulate the large number of institutions serving the coffee industry.

185. The objective of this section is *not* to present an exhaustive review of the performance of coffee institutions and organizations in the past. Rather, the approach is forward-looking: to identify areas where these entities can play a key role in facilitating a competitive transition for the coffee sector and sustainable development of the rural economy. The section makes a brief presentation of the main coffee institutions in Central America and then concentrates on how institutions and organizations can support the development and competitiveness of quality coffee in Central America. A special focus is on appropriate trade policy.

A. Brief description of Coffee Institutions in Central America

186. The coffee sectors in Central America have been traditionally in the hands of the private sector. During the period of quotas under the International Coffee Agreement, local institutions were needed to administer the export quotas. Since the suspension of the export quotas in 1989, private and public institutions continue to play an important role in the coffee sector of Central American countries.

187. The main public institutions in the coffee sector in Central America are:

- Costa Rica: ICAFE
- El Salvador: Consejo Salvadoreno del Café (CSC); PROCAFE
- Guatemala: ANACAFE
- Honduras: IHCAFE; Consejo Nacional del Café (CNC); Fondo Cafetero Nacional (FCN)

- Nicaragua: Ministry of Agriculture (MAGFOR)

188. There are differences in the roles, performance, and effectiveness of these institutions. In both Guatemala and Costa Rica the public institutions are considered to be strong and with clear strategies for their technical, social and economic programs. In El Salvador, the role of the public institution is split between CSC and PROCAFE with the former being more of a political coordination and marketing body and keeping statistics and the latter dealing with technical issues and extension. In Honduras, while the role of public institutions is now somewhat better defined and more transparent, they have yet to prove their effectiveness. In Nicaragua, coffee issues are dealt with at the Ministry of Agriculture. Since many of these public institutions receive a major portion of their operating budget from a levy on coffee exports, they currently face significant financial difficulties because of the very low international prices.

189. In addition to the public institutions in the Central American countries, there are also private institutions involved in the coffee sector. These are mainly private sector associations and usually tend to be fragmented with the possible exception of exporters associations. There are several well-organized producer organizations that provide balance to larger producers and processing and export companies. The development of these organizations is usually within the realm of NGOs and cooperative development entities. There are some successful producer organizations including FEDECOCAGUA in Guatemala, UCRAPROBEX in El Salvador, PRODECOOP in Nicaragua, and COOCAFE in Costa Rica, amongst others. These organizations have leveled the playing field for smaller farmers and have gained access to international markets.

190. Associations and institutions have developed alliances with other players in the domestic and international coffee economy. These vary in purpose and focus, though all have the broad objective of improving services and hopefully result in higher incomes for their members. Some examples of such alliances are as follows:

- ANACAFE, IHCAFE and ICAFE have negotiated with financial institutions to provide technical assistance required for credit to their members;
- Coffee associations in Central America have signed letters of understanding with the Specialty Coffee Association of America (SCAA) that will provide them with technical support and voice in the specialty coffee industry;
- Some cooperatives have negotiated long-term contracts with roasters guaranteeing the use of their members' coffee in the roasters' blends and brands;
- Some cooperatives have been particularly successful in selling to fair trade organizations and in promoting exports of organic coffee at significant premiums. Some of these obtaining financing from external sources linked to the production and exports of fair-trade and organic coffees.

B. Supporting the Competitiveness of Quality Coffee

191. The role of national ministries, coffee institutes, councils, and associations in supporting the competitiveness of the coffee sector begins with definition of, and consensus about, a strategy. Many have yet to develop sector-wide coordinated measures

that will reflect a combination of social priorities, economic capacity, and political resolve. These must be harnessed in long-term programs that also produce some clear results in the short term.

192. The absence of consistent coffee policies often impedes the development of a cohesive sectoral strategy. Failure to develop coherent strategies tends to waste resources, duplicate efforts, confuse or alienate sector participants, and consequently reduce the competitiveness of a nation's coffee exports. Since institutions help determine and execute policies, a comprehensive institutional assessment and review would serve many countries well. The key to success for all of these institutions revolve around 3 factors:

1. A cohesive policy and subsequent strategy that are determined by a participatory process involving all of the sector's key actors
2. Strong, business-oriented management by objective for lean and efficient operation
3. Clearly established monitoring and evaluation that ensure accountability and transparency

193. To be effective, any sectoral strategy requires a systemic approach that is comprehensively adopted throughout the chain of coffee production, processing, and export. Institutions are critical in order to foster the broad adoption of strategies that are widely supported throughout the sector. They have key roles to play and, with government support, they could:

- *Define standards and incentives for quality production and competitiveness.* Identifying, assessing, and supporting production of quality coffee requires, first and foremost, reaching consensus among the key coffee institutions on what quality coffee means. This can include the legal recognition of market-defined norms and standards. Once quality is defined, it can be followed with institutional support to the competitive production and processing of quality coffee. Market promotion of quality coffees is also necessary. Establishing and putting in place the right incentives for quality recognition at the different stages of the production chain will motivate better quality production.

- *Promote quality certification.* In the long run, support can be extended to creating a credible, impartial, and independent system for quality certification: one that responds to market requirements with respect to taste and the environmental and social concerns of consumers. Other incentives that promote production and consumption of quality coffee in the domestic market can be implemented. A positive example is Brazil. Its certification programs have promoted domestic consumption while improving quality.

- *Support the organization and consolidation of smallholder production.* Institutions can help support the consolidation and integration of the coffee industry, especially by working with small and medium producers to enable them to achieve better economies of scale, adequate volume, improved quality control, and improved market access.

- *Provide technical assistance, research and extension services* to coffee producers and millers that is private sector driven and responds directly to their needs. This can be a key element for empowering smallholders and enhancing quality. Support can be pursued in two areas: adopting best practices for quality production and prevention of defects, and capacity building for quality measurement, through cupping and physical evaluation. Entities such as IICA, CATIE, CIRAD, the regional coffee institute PROMECAFE, national coffee associations and institutes, and NGOs have been working in these areas, in addition to independent experts.

- *Build partnerships.* National institutions and privately held associations have developed alliances with national and global organizations. These vary in purpose and focus, although all aim to provide better services and secure higher incomes for their members and for the coffee industry in general. For example, ANACAFE, IHCAFE, and ICAFE have undertaken individual arrangements with financial institutions to provide technical assistance required for credit to members. Coffee associations and the Specialty Coffee Association of America (SCAA) have signed letters of understanding for training and assistance.

- *Improve market access.* Partnership building is also important for improving market access. For example, cooperative associations have negotiated quotas for members' coffee in higher-priced alternative markets such as Fair Trade, as well as long-term contracts with roasters, guaranteeing the use of their members' coffee in the roasters' blends and brands. The development of a legal framework in which international coffee contracting laws can be sustained can both facilitate and encourage the development of long-term contracts, and secure partnerships between sellers and buyers under which both parties can be sure of performance. Other steps could include developing market information systems for coffee producers regarding prices and potential markets, and facilitating technical assistance for brand development, partnership building, and market access.

194. Promoting the competitiveness of coffee also includes defining and implementing adequate trade policies and incentives for market outreach. The indirect effect of higher competitiveness and improved production and certification mechanisms will be higher quality product; this, in turn, could increase demand. Central American countries should allow free trade in coffee something that could encourage national industries to improve forcing non-competitive suppliers---which are typically protected----to exit and shift to other sectors.

C. Trade Policy

195. Trade barriers directly impact the competitiveness of coffee and indirectly undermine the potential of quality improvement. Traditionally, coffee has suffered discrimination in trade and exchange policies. The current policy framework has been improved by policy reforms, particularly in the 1990s, but important issues still remain (see table X-1).

196. The region is still feeling the effects of export quotas established by the International Coffee Organization, which required strong intervention of the coffee markets at the time of their implementation. The export quotas were discontinued in 1989. Central American countries have had an asymmetrical treatment of imports and exports. While imports were typically protected, exports were subject to discrimination. As part of this asymmetric treatment, coffee has been traditionally discriminated by trade and exchange policies, resulting in many cases in a negative rate of protection.

197. Complex export procedures and taxation schemes act as disincentives for quality production and the quality coffee competitiveness and profitability. It is important to revise and correct policies that reduce the competitiveness and profitability of Central American coffee exports. Policies may include: defining region-wide standards and protocols that establish criteria for the recognition of coffee regions (such as Antigua coffee); extending tax incentives for importing technology such as environmentally friendly coffee processing; justifying or phasing out remaining export taxes for coffee[31]; and reducing transaction costs and barriers by streamlining exporting procedures.

198. Finally, it is important to include coffee in trade negotiations, especially in new markets and internal Latin American markets. Import tariffs on coffee from countries in the region must be revised. Lower tariffs are related to higher competitiveness, larger profits and, potentially, quality increases.

[31] Some small level of export levies may be justifiable to finance the public institutions involved in the coffee sector as many Central American countries are doing currently.

Table X-1. Coffee Trade Policies in Central America

Issue	Implication
Coffee was excluded from free trade in the Central America Common Market Agreement signed in 1960.	Domestic coffee markets are small, and coffee firms do not have the possibility of benefiting from the larger Central American market envisioned in the customs union agreement. Inter-regional coffee trade is treated as third county imports, restricting coffee trade and investment in the region. This also restricts coordinated region-wide responses to the coffee crisis.
Nations collect export taxes and charges for coffee institutes and coffee funds. Foreign exchange earnings are surrendered at official rates.	The export taxes and charges and the exchange rate penalty reduce price-competitiveness. The export taxes and charges reach an annual amount of US$25 million for the whole region. However, a small levy on exports to finance public coffee institutes may be justifiable.
Exporter registration and bonding requirements. Requirement to present export contracts to government institutions before shipment. Export certificate are also required, as well as a central bank export permit for each shipment.	Barriers to entry are erected and transactions costs can be considerable. These are somewhat diminished through "one stop export shops," but can be nonetheless significant. This tends to concentrate the players and increase the bargaining position of traders and exporters who are already in the export and trading business, further restricting farmers' share in the value of their product.
National export quotas were prevalent in previous ICO agreements. The current ICO does not include quotas.	However, those quotas left a legacy, which includes coffee laws, and quasi-public agencies, which administered these quotas, among other responsibilities. These organizations concentrated on taxation and burdensome regulations and did not pay enough attention to trade promotion, trade facilitation, and quality enhancement.
All these trade controls, largely without constructive purpose, exist in an industry largely made up of poor farmers, who are unable to withstand price or weather crises, and who still must realize quality improvements.	Coffee agencies and councils should refrain from interfering in trade regulation, collect their fees with a minimum distortion effect on the market (particularly separating the funding requirement from export regulatory requirement and burdensome transaction cost).

XI. SUMMARY AND CONCLUSIONS

199. Central American coffee producing countries are at crossroads. Coffee prices in 2002 are at record lows. Persistent global over-production and stagnant consumption has led to accumulation of inventories and competition between origins has intensified. Coffee prices have plummeted below costs of production for many coffee producers and this is causing hardships for coffee farmers worldwide, including Central America. Indeed, the current coffee crisis seems to be structural in nature: the increase in production of Brazil and Vietnam (two low cost producers) along with higher flexibility in blending coffees by roasters (using steaming methods to disguise quality imperfections) is creating a new environment for Central American countries. At the same time, quality coffees can at times command significant premiums and there are expanding markets for specialty coffees (gourmet, sustainable, fair-trade, organic, etc.).

200. Coffee growers in Central America are facing new challenges. These challenges call for new strategies, the centerpiece of which must be the broad-based sustainable development of their rural economies. The paper deals with the impacts and strategies to deal with the crisis.

201. An initial assessment of the impact of the crisis on Central American countries yields the following observations:

- The impact of the crisis on the macroeconomic situation is not as significant compared to the sector specific impacts. While export revenues have significantly declined (by about 44%), this loss of export revenues accounts for only 1.2% of the GDP. On the other hand, the crisis has contributed to the deterioration of the BOP deficit for Central America which reached 6% of the GDP.
- The crisis is more pronounced in terms of loss of employment, revenues by small farmers and repayment of debt by medium and larger farmers. Employment in the coffee sector is a significant percent of rural labor force, on average around 28% for Central America as a whole, and up to 42% in some countries such as Nicaragua. The loss of permanent employment due to the crisis is estimated to be 54% while the loss in seasonal employment is estimated to be 21%.
- Problems in loan repayments by coffee producers are evident in all Central American countries, particularly in El Salvador and Nicaragua, accentuating problems for some financial institutions.
- While, with the exception of El Salvador, the overall coffee production and yields have been increasing in Central America during the 1990s, there was a decline in both production and yields between 2000 and 2001, which is partly due to low coffee prices.

202. The surveys of coffee producing countries in Central America point out some strengths that these countries have:

- Costs of production have been in line with other major coffee producing countries, but higher compared to some of the most dynamic producers (e.g.

Vietnam and India). Costs of production have also been declining during the 1990s in most Central American countries.

- A large percentage of the coffees produced can be classified as high and strictly high (altitude) grown. This indicates the significant potential for improving quality and penetrating niche markets (gourmet and other specialty).
- Central American countries have done a good job so far in penetrating gourmet and niche coffee markets. In particular Costa Rica and Guatemala manage to sell a high proportion of their coffees (about 35-50%) into differentiated and specialty markets. Exports to organic and fair-trade markets is limited (less than 1%) but growing. Other countries, notably Honduras and Nicaragua, have a high potential for selling more into differentiated and specialty markets. And all Central American countries can significantly increase their exports into organic and fair-trade niches.

203. Central American countries have, to a large extent, responded to the coffee crisis, but in a very traditional way. The focus of the responses has mainly, if not exclusively, been to support prices to coffee farmers and to restructure the debt of the segment that enjoys access to formal credit. These programs tend to be regressive in the sense that they tend to benefit proportionally more the larger farmers. Needed structural changes to reposition the coffee sector in these countries, improve marketing of coffee (gourmet and niche markets), improve quality and reduce costs, support for diversification in marginal (non-competitive) areas, have been slow to come. The focus is to keep producers in coffee by supporting prices and solving their debt problems. While this type of solution might mitigate the immediate problem, it does not pave the way for the longer term viability of the coffee sector in these countries.

204. What needs to be done to address the longer term viability of the Central American coffee sector? As it was discussed earlier, the longer term solution lies within the context of sustainable rural economic development of these countries. But there are also some very specific coffee based solutions that can be pursued in parallel. Some of these solutions can already be found applied in certain Central American countries, but more can be done and in a more systematic way.

205. Specific strategies focus on two main areas: solutions for farmers who will be able to stay competitive in coffee and solutions for farmers that will not be able to stay competitive. For the former, solutions focus on improving quality, marketing, and technology. For the latter, solutions will focus on devising strategies to diversify out of coffee. Along with these solutions, there is a need to address the social and environmental issues that arise with the current coffee crisis. Also, solutions to improve competitiveness and introduce diversification programs have implication for the environment and social issues.

206. **Improving competitiveness: coffee quality and marketing.** Central America's advantage in the coffee market lies in having many growing areas with the adequate agro-ecological conditions to produce high quality coffee. Although certain countries in the region have made progress is exploiting this advantage (notably Costa Rica and

Guatemala) others have done little. Overall, the region has significant potential to improve quality and penetrate high quality, specialty market segments for coffee. Quality improvement programs should aim at improving quality in primary production and also in coffee milling (beneficio seco y humedo).

207. Earlier work by IDB/WB/USAID has identified four key elements in a strategy to promote quality. These are:

- Understanding and evaluating coffee quality;
- Identify the key problems that affect quality;
- Defining the alternatives for overcoming these problems; and
- Determining public policies and investments (public and private) that will facilitate the adoption of these alternatives.

208. To be effective, a quality enhancement strategy would need to be comprehensive and be applied throughout the entire coffee production chain—harvest and post harvest. Special focus should be devoted to four areas:

- Identifying and supporting the geographic areas with suitable agro-ecological conditions for quality production;
- Guaranteeing the production of quality beans, by designing and implementing broad coffee bean management and programs aimed at reducing defects; and
- Pursuing value-added and marketing strategies aimed at building partnerships and long-term market links, receiving higher premiums for quality, and accessing high revenue segments of the market.
- Explore some useful promotional strategies such as e-trade and auctions, cup of excellence, campaigns to promote internal consumption and market information systems. Promotional policies should also focus on farmers and try to disseminate information about the environmental benefits of coffee along with best practices.

209. Related to the issue of improving competitiveness is improving the ability to deal with price shocks. The use of risk management instruments can reduce price uncertainty and protect farmers against negative price shocks. This may improve access to credit and increase flexibility in marketing decisions.

210. **Devising a diversification strategy for non-competitive coffee farmers.** Developing a successful strategy for agricultural diversification requires a systems approach, covering both agricultural and business constraints, along with environmental and social issues at the same time. Factors to be addressed should include reliable agricultural support services; research and extension in production, marketing, and promotion; credit; infrastructure; technical assistance and training in business and risk management; and market intelligence and regulation. Although some coffee producers might not be competitive, it is important for the for the government to resist temptation in picking winners or losers. Enabling conditions for diversification are in many circumstances similar to those for promoting increased competitiveness. And both require a broad-based sustainable rural development strategy.

211. **Addressing social issues.** Social vulnerability also must be reduced, in both the short and long term. To assist coffee producers, workers, and their families, better social protection is needed (particularly short-term actions such as safety nets and mechanisms to improve food security). To protect small coffee producers who are vulnerable to price shifts, price risk insurance mechanisms and similar instruments should be developed and adopted. More research is needed to assess the income and consumption impacts of the coffee crisis on producers and laborers, and other economic agents directly and indirectly linked to the coffee sector. Such research would quantify the impacts and be used to help identify appropriate strategies, target groups and instruments for social protection programs designed to address the crisis.

212. **Increasing the environmental awareness of coffee production.** Finally, a sustainable strategy for the coffee sector must consider the environment. Sound environmental management can enhance coffee quality and productivity, profitability, competitiveness, and sustainability of coffee systems. In addition, it can maintain land productivity and provides value-added market opportunities (such as conservation coffees and environmental services). Strategies must work with environmental programs, exploring the potential positive externalities between environmental sustainability and actions to promote coffee quality enhancement and diversification. At a minimum, any coffee quality and diversification strategies to be implemented should not have negative impacts on the environment, especially on biodiversity and water use. Similarly, social impacts of any strategies should be considered. Active partnerships with NGOs, as well as work with research and extension centers with expertise and experience in environmental management, can serve these ends.

213. **Institutional Issues**. Public and private sector coffee institutions in Central America can play a key role in promoting competitiveness of the coffee sector. An important first step will be for a country to define its coffee strategy to respond to the new challenges and changes of the world coffee market. Coordinated measures will reflect a combination of social priorities, economic capacity, and political resolve. These must be harnessed in longer-term programs but that can also produce some tangible results in the short-run. Specific areas and programs that public and private institutions in Central America can promote could include: (a) promoting the production, processing, marketing and promotion of quality coffees; (b) supporting the organization of small farmers; (c) providing effective technical assistance, market information, research and extension to growers; and (d) facilitating partnerships and alliances between local and foreign partners.

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